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MODERN TRANSPORT

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See Page 5

VOL. LXXXI No. 2099 [Registered at the G.P.O. as a newspaper] LONDON, JUNE 20, 1959 PRICE NINEPENCE

CURRENT TOPICS

Away to a Good Start

WITH the introduction of the summer timetables on June 15 diesel-hydraulic locomotives of the Warship class took over responsibility for the operation of the *Bristolian* the fastest scheduled train on British Railways, between Paddington and Bristol Temple Meads. The Western Region also took the opportunity to reduce by five minutes the time allowed for the 118¼-mile journey via Bath to 1 hr. 40 min. This represents an average speed of 71.01 m.p.h. for the journey from start to stop, but on the first day *Benbow* might almost be said to have carved this up by dint of reaching Bristol in 1 hr. 33 min. 48 sec. to give an average speed of 75.8 m.p.h. for the journey. This was despite the severe 15 m.p.h. slack over the canal bridge at Hayes which is still in force and which caused a gain of ½ min. at Southall, by which time the train had reached 80 m.p.h., to be turned into a loss of 2½ min. on schedule passing Slough. The bit was, however, metaphorically between the locomotive's teeth as evidenced by a speed of 92 m.p.h. at Maidenhead and thereafter we rode steadily on at speeds in the eighties, with a maximum of 95 m.p.h. just before easing up down Dauntsey Bank, until we began preparing for the restriction through Bath Spa with a gradual reduction which had brought us down to 75 m.p.h. at Box. The time from Paddington to passing Bath was three seconds under 82 minutes for the 107 miles and the remainder of the journey was completed in equally satisfactory style save for an adverse distant signal as we neared Temple Meads. Castle class locomotives in the past have put up some very fine performances with the *Bristolian*, but what made the occasion such a good start to an improvement in travel facilities was the comfortable way in which the gain was achieved, while leaving the impression that there was always something in hand and that it was no special effort but merely a routine affair. It should make it possible to bring to an end the jibe that the railway timetables are the best works of fiction and that, too, applies to the Kent Coast electrification.

Thanet Electrification

MOST of the lines of the late lamented London, Chatham and Dover Railway are about 100 years old, the first section in the Chatham neighbourhood having been opened in 1858. The Thanet towns were reached along the Kent coast line five years later, by which time independent access to London had been secured. The present modernisation is not the first the railway has had—there was four-tracking between Shortlands and Bickley, for example, and electrification out to Gillingham in 1939—but it is the most costly and the most fundamental. The electrification from Gillingham to Margate and Ramsgate, Faversham to Dover and from Sittingbourne to Sheerness, opened on June 15, has, with corollary works such as the improved junctions at Bickley, resignalling, four-tracking and station improvements, cost £25 million. After some years of tribulation, while the works were carried out, the customers get a rejuvenated and greatly improved railway. As with previous Southern schemes the timetable aims at mass-production of transport to a great many intermediate stations. What the service lacks in spectacular high speed is made up for by frequency and reliability, factors that have proved valuable builders of traffic in the past. The technical interest of much that has been done is considerable, especially in the civil engineering, signalling and electric traction fields. Not the least extraordinary of the achievements is the 77-ton double bogie eight-wheeled electric locomotives, which can exert 2,500 h.p. normally and much more for short periods. These are direct successors of 12-wheeled machines weighing over 100 tons with a rating of under 1,500 h.p., showing a remarkable advance in design in two decades. It was a pleasant gesture to use one of these English Electric machines on the *Night Ferry* to and from Dover on June 8 and 9, just before the official opening ceremony at Margate.

Governments, Railways and Users

ADDRESSING the recent Washington congress of the International Chamber of Commerce Mr. L. G. Burleigh, lately transport officer of I.C.I., who continues as chairman of the Traders' Co-ordinating Committee on Transport, who has recently accepted the chairmanship of the Transport Users' Consultative Committee for London and who said he spoke as a user with a bias towards freight transport, dealt with what he termed a challenge to all—the financial situation of the railways. Expressing a few personal views he said he believed that railways would continue to be essential in the foreseeable future, both in developed and underdeveloped countries, but to be commercially successful they must make major changes. They must be modernised and, more especially, be reshaped and streamlined to meet changing circumstances and so produce a proper net revenue. A more dynamic approach was needed on the commercial side, with the use of modern market research techniques, and in developing door-to-door service consideration must be given to the users' factory activities which were apt to vary according to the method of transport. The railways, however, could not succeed unless Governments were prepared to assist by relieving them of financial obligations not imposed on other methods of transport. They should no longer be compelled to provide unremunerative services. In his own country the legislation of 1953 had established that in the absence of inter-carrier competition, which should protect the user against improper price demands, reasonable charges subject to appeal must be applied. Mr. Burleigh added that recently the users' associations had been discussing with railway representatives, in detail and very frankly, remedies for the decline in freight revenue and it was hoped that some advance would be made towards solving the problem of the proper balance between rail and road transport, a difficult task, he suggested, so long as railways remained necessary and yet financially unsound.

Rocol Expansion

NOT without some attempts at detraction on the part of interests that normally take a progressive view of events, Rocol, Limited, the British pioneer of molybdenum disulphide lubricants, has managed to create and develop an enterprise that uses raw materials available within the Commonwealth and promises to make a not unimportant contribution to the country's economy. Already with successful associate companies established in Switzerland and the United States, the parent company has developed strongly at home and recently opened a new factory and research laboratory at Swillington, near Leeds. The preparation of molybdenised lubricants requires the careful selection of molybdenite, the ore from which molybdenum disulphide is obtained, the freeing of this material from harmful impurities and grinding techniques that reduce it to minute particle size and finally the development or selection of suitable suspension media—conventional petroleum lubricants, water, spirits or synthetic varnishes—for various applications. It is in these matters that Rocol, Limited, has established a clear lead since its research staff first investigated the properties of molybdenum disulphide in 1950. Today there are 38 different Rocol products embodying the new material, which is said to resist wear 15 times longer than graphite, and these are finding increasing application in many different branches of industry where extremes of temperature or high pressures have posed lubrication problems.

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The Ties of the Permanent Way

WHEN he proposed the toast of "The Permanent Way Institution" at the annual summer dinner which took place during the 75th anniversary convention in London, Sir Brian Robertson, chairman of the British Transport Commission, said that he liked it for its ideals and the objects for which it was founded. It was set up to encourage good technical efficiency, research and development in the maintenance of the permanent way and structures of the railways. It was also founded to promote cameraderie and good fellowship among those who were responsible for the permanent way of the railways and Sir Brian liked particularly its democratic character. One found people from all levels at the meetings of the institution. The success of the convention, the programme for which was outlined in our issue of May 30, served indeed to underline the enthusiasm with which the affairs of the institution are conducted and the president, Mr. C. E. Dunton, reported with obvious pleasure that on his visits so far he had found that the papers presented were of a very high standard and so too were the discussions in which staff at all levels had joined to the full. They were proud to see the spread of the institution within the British Commonwealth and also the springing up in recent years of its counterparts in the Netherlands, Germany and France and glad to have their representatives with them at the convention. "We believe," said Mr. Dunton, "that co-operation is not only good for the health of the railways of the world but that it also promotes the spirit of goodwill and friendship between the people of all nations." All will look forward to the P.W.I. centenary convention.

B.T.C. Workshop Policy

THE British Transport Commission, which has a duty towards industry (on which it relies for traffic) as well as to its staff, is having difficulty in implementing its policy regarding railway workshops. Announced in our issue of May 23 this policy gives a share of orders—in some quarters regarded as overmodest—to outside contractors, while retaining a major portion for execution in the railway works, provided always that costs are on a commercial basis. It is estimated that of the 120,000 workers in the railway shops 11,000 will in the next three years be affected by reorganisation arising mainly from the changeover from steam to diesel traction. This does not satisfy the unions and, at a meeting on June 15 with the Commission, representatives of the N.U.R. and the Confederation of Shipbuilding and Engineering Unions urged that the production of new diesel locomotives, as well as rolling stock and certain other work, should be carried out in railway workshops and not by private contractors. It was suggested that the intake of new apprentices should be reduced to a minimum and reductions in the labour force should be effected by normal wastage instead of dismissals. Threatened redundancy in private industry, it was stated, had sometimes been averted when employees contemplated a strike, and railway workshop men might not always be as patient as they had been. The Commission had in fact already promised to mitigate hardship and to control the recruitment of new labour, but further consideration is being given to the arguments put forward by the unions.

Thinking about Computers

AN attractive coloured film lasting 40 minutes has been produced by International Computers and Tabulators, Limited—the recent combination of the makers of Hollerith and Powers-Samas equipment—and is entitled *Time to Think*. It is not a film about the design and manufacture of computers as such. It avoids the usual "how it works" angle and concentrates on presenting the economic case for the digital computer from the prospective user's point of view—in terms of the leading personalities in a typical manufacturing firm of moderate size. It answers the basic questions which any organisation interested in the potentialities of the computer must face: "How do we find out whether a computer can be of use to us?" "Which computer will best meet our requirements?" and "How do we set about preparing for its installation?" Instead of the tendentious one-voice narrative usual in industrial films of this kind the differing points of view and prejudices for and against of various members of the top management executives are expressed in dramatic form. These executives are characterised and identified according to their qualifications and position in the firm (production, sales, finance, etc.), while the spokesmen for the computer company are represented as reasonable undogmatic fellows, not given to extravagant sales talk, whose approach is "Let us help you to solve your problems," not "You, too, must have a computer." An essential part of the story shows how the still uncommitted potential user-firm decides nevertheless to appoint a "feasibility team" from its own staff and how the selection of the team is made. There is emphasis on the care and thoroughness with which this team looks into the firm's existing organisation and methods. Although there are brief glances at computer production, research and design, and at the education and training of those who will be in day-to-day control of the equipment, the main emphasis throughout is on the solution of many of the management problems that arise in the user's organisation. It shows clearly a possible approach to the problem of finding out how far the computer can help in solving problems. Current discussions in the bus industry suggest that a joint team of municipal and company operators might attack the feasibility aspects of computer compilation of timetables on the lines of this film with advantage to all, for it is in the setting up of programmes that the key lies.

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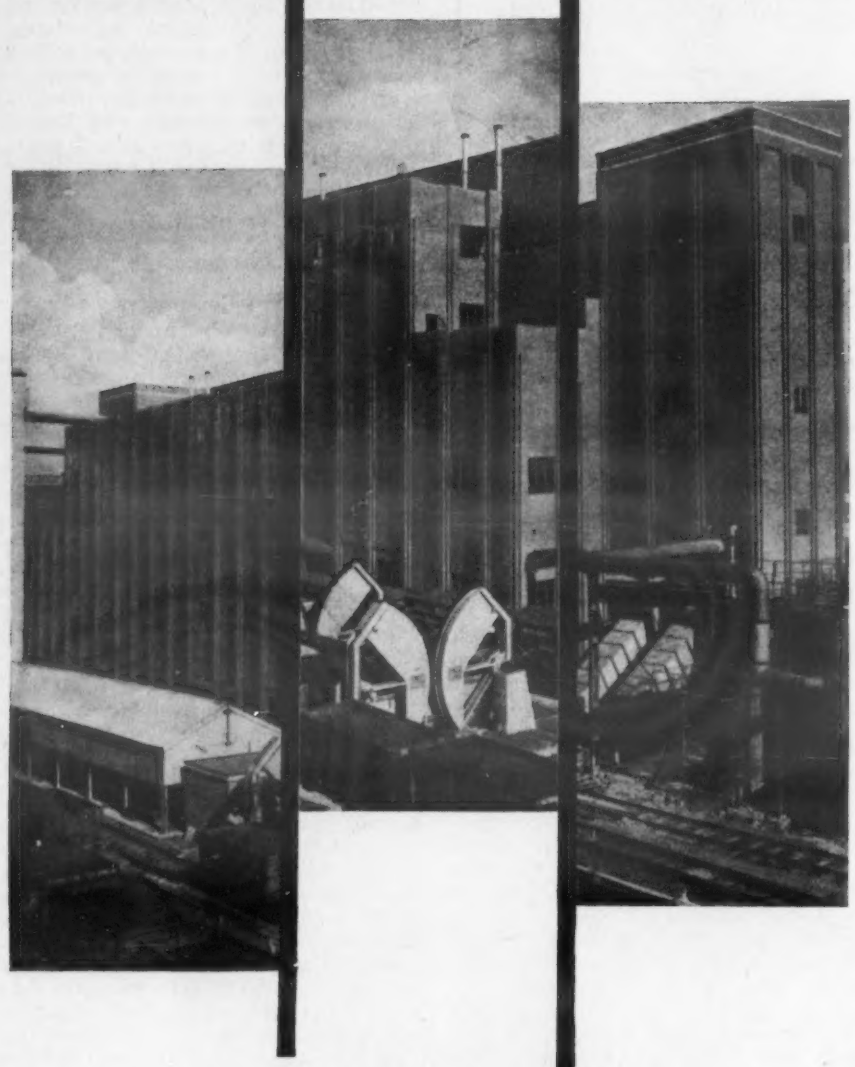

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The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.

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Transport Consultative Committees' Reports

INTERESTING information is invariably available in the reports of the Transport Users' Consultative Committees, and those recently published for the year ended December 31, 1958, are no exception to the rule. In its tenth annual report the Central Committee reiterated the Minister's view that the committees are custodians of the users' interests and have a very real rôle to fulfil in helping to ensure that the rationalisation of railways goes forward smoothly and quickly. That the work of all the committees increased considerably during the year was primarily due to the growing number of B.T.C. proposals for the closing of lines and stations and the withdrawal of services, and there have been many more representations on these and on other matters by public bodies and associations. In underlining this trend the committee hopes that the public, who, it states, have a right to express their views on nationalised transport, will make still more use of the machinery provided to enable them to do so. Remarking that the cases still to be submitted in which economies obviously outweigh public inconvenience may become fewer, the committee states that the clash between conflicting interests "is already inclined to take the form of a head-on collision" and that the middle way, most to be desired, would be to retain the services by putting them on a paying basis. As to reduction of costs it seems that the growing experience of diesel operation is giving extremely encouraging results. But to increase traffic there must, in the committee's view, be a marked improvement in the amenities of rail travel; dieselisation alone is not enough and in such matters as the cleanliness of trains and portering standards are still below what they should be: such standards should be raised. The time is envisaged when if any particular body of transport users requires transport that can only be provided at a loss or under special conditions, whether by road or rail, it will be provided only at a special charge, for the days are gone when losses in one direction can be carried by profits gained in another: "in the overall operation of the British Transport Commission there are now no profits which can be relied upon for this purpose."

£900,000 Saved in a Year

DURING the year the Area Committees considered and recommended proposals for the closure, or partial closure, of 28 branch railways and the closing, in addition, of 148 stations, compared with 10 branch railways and 60 stations in 1957. The minimum annual saving estimated by the Commission to result from these proposals amounts to £909,218, compared with £137,767 in 1957, bringing the total of such savings since 1950 to £2,586,339. Stating that in certain cases the method employed by the Commission for the assessment of savings, though adopted in good faith, was partly based on theories of accountancy which did not give Area Committees a sufficiently clear picture, the committee appointed a subcommittee to consider new proposals with the Commission. Agreement was subsequently reached, with the result that "by eliminating theoretical and problematical calculations of savings from the estimates, and looking at immediate and tangible savings only, we feel that, as reasonable men and women, Area Committees are now able to assess each case which comes before them with confidence." Details of the revision are given in an appendix. In view, also, of the obvious need, which we ourselves stressed some time ago, for speeding up the procedure for dealing with such proposals, discussions with the Commission have resulted in a reduction from 10 months to 14 weeks in the time occupied in considering proposals and submitting them for conformation to the Central Committee. The Committee commends the Minister's assistance in achieving this end, and particularly the exhortation addressed to all local authorities' associations asking for their co-operation in the speedy preparation of representations. It is hoped that this acceleration of procedure will enable examination of cases involving some 30 branch lines to be completed within the next few months.

Reduction versus Withdrawal

MEANWHILE the Committee welcomes reductions in the services of uneconomic local stopping trains, a course which it approves in principle and would have welcomed earlier. It believes that greater economies are likely to be achieved by these reductions than by the closing of small branch lines as, in consequence, a greater or more profitable use can be made of the railways for freight and main line passenger traffic. Stating that there must be areas where the traffic potential may be enough to support local services but for which electric trains or diesel units cannot yet be provided, the committee commends the action of the Southern Region, particularly in Kent and Sussex, in improving the steam train service on rural lines, in some cases doubling the number of trains on the service and using the fixed interval timings almost universally adopted by bus companies. "This policy," the report states, "should help to prevent the drift of passengers away from rail and to preserve the goodwill of the railway until new methods of traction can be provided." The committee has failed to notice any appreciable improvement in arrangements for telling passengers about the late running of trains and other matters; it finds the system of ensuring that coaches are properly cleaned, both inside and out, is not as effective as it should be and considers that a greater effort could be made to maintain a standard of excellence in the coaching stock used, particularly in the Continental boat trains from which many overseas visitors get their first and last impression of Great Britain. The time has come, it states, for a real drive to put this matter right and to revive that pride in his job and his service which was a characteristic of the old-time railwayman and without which no satisfactory standard can be maintained.

Rural Services

DEALING with unremunerative bus services, now steadily increasing, whereon in the past the loss sustained was only a few pence per car mile and can now be measured in shillings, the report stresses the need for encouraging the smaller operator. If, it states, these village bus operators are to be brought back into the field they must be given some special inducement other than the recent welcome relaxation of the standards of construction; they must be helped to co-ordinate their efforts with those of other operators, perhaps be granted some simplified form of licence and be supported and guided by advice from some representative body. This subject is commented upon by the Scottish, and Wales and Monmouthshire consultative committees. The latter recalls the Minister's view, publicly announced 12 months ago, that the Commission is under no obligation to provide alternative services for rail traffic displaced by train service withdrawals, and states that it would like to see further efforts made at the highest level to encourage the local authorities and all concerned to help consultative committees in the arrangement of alternative transport upon which the withdrawal of a train service is not necessarily conditional. This committee is emphatic on the reasonableness of proposals for the withdrawal of unremunerative railway facilities. The major proposals, it states, were submitted by the Western Region, and no loophole could be found through which the committee was able to offer any defensible resistance to the plans. It continues: "The committee examined notional dieselisation figures in respect of all six complete withdrawal proposals submitted and found in every instance that whilst train working and fuel costs could be cut to an appreciable extent the remaining liabilities under these heads, together with all the costs inherent in the operation of a passenger railway, heavily outweighed the revenue which was accruing or which could be expected to result, even from an improved dieselised service."

★

Forthcoming Events

Until June 25.—Institute of Transport. Congress. At Copenhagen.

Until June 27.—International Plastics Exhibition and Convention. At Olympia.

June 20.—Permanent Way Institution (Leeds and Bradford). Visit to B.T.C. Engineering Research Laboratories, Derby.

June 20-28.—Omnibus Society. West of England tour.

June 21.—Omnibus Society (Scottish). Visit to Western S.M.T. Co., Limited, Greenock. 3 p.m.
Southern Counties Touring Society Cruise on Grand Union Canal.
Norbury Transport and Model Railway Club. Trolleybus tour of Bournemouth.

June 27.—Permanent Way Institution. Visit to Meldon Quarry.
Light Railway Transport League. Paper by Mr. E. K. Stretch, "The South Lancashire Tramways." At 153 Drummond Street, N.W.1. 6.30 p.m.

July 5.—Omnibus Society (Northern, and North Western and Yorkshire). Visit to Lancaster City Transport. At Kingsway Depot, Lancaster. 2.45 p.m.

July 8.—Light Railway Transport League. Paper by Mr. G. W. Morant, "Scandinavian Tramways." At 153 Drummond Street, N.W.1. 7 p.m.

July 11-17.—Railway Students Association. Annual Convention. At Newcastle upon Tyne.

July 12.—Omnibus Society. Visit to Wilts and Dorset Motor Services, Limited. At 8 Endless Street, Salisbury. 2.15 p.m.

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RAILWAY TRACK RECORDER

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ACCURACY UNDER DYNAMIC LOADING

As a result of trials conducted some years ago, British Railways has now placed in service a new track recording coach which is claimed to be the first of its kind in the world. The trials were carried out to test the respective merits of the various types of existing vehicles, but since all of them were found to have certain limitations, British Railways' civil engineers drew up an entirely new specification for a vehicle that would embody the most recent developments in measurement, transmission and recording techniques.

The design has been evolved by Elliott Brothers (London), Limited, in conjunction with British Transport Commission research and development engineers, and differs radically from the older type of track recording unit in that it is self propelled and uses fully automatic means for obtaining, transmitting and recording measurements independent of any irregu'ar movement of the bodywork of the vehicle. Another advantage is that it incorporates provision for assessing track conditions under a loaded vehicle while it is in motion over the track and is able to make continuous recordings up to a speed of 30 m.p.h. By a system of electrical measurements the coach verifies and records on a moving chart the width between rails, the regularity of track curvature and, by relating axle movement to a high-speed gyroscope, the superelevation—or cant.

Measuring Apparatus

At the same time as the record is being taken, a previous chart of the same piece of track can be viewed on an adjacent display, thus making it possible to assess any deterioration, and to check on any maintenance work which has been carried out. The possibilities of such accurate and continuous readings are enormous, and because they can assist in the important study of the relationship between train riding and minor track irregularities, may eventually have a direct influence on the development of new and improved bogie design.

The positions of the equipment for the measurement of curvature, cant and gauge are shown in diagrammatic form in the line illustration. For the measurement of gauge and curvature, probes are carried from a lattice girder framework supported at the axleboxes. These are spring loaded against the rails and guide shoes running in the opposite flange way ensure their passage through gaps at points and other fittings and prevent them from taking the wrong route. When operating, the probes are held down by compressed air and are retractable when not in use. There is also a special emergency switch to enable them to be raised by the observer if obstructions are seen on the track. At present the vehicle has provision for the measurement of one rail only, irregularities on the other rail are deduced from the gauge record.

Cant is measured by comparing the position of one of the axles with a datum provided by the gyroscope. The spin axis of this gyroscope is maintained horizontal across the coach at all times and the axles are arranged with the necessary degrees of freedom to permit them to follow the track without restraint, so that they are able to twist relatively in both lateral and vertical planes. Correcting torques are applied to the gyroscope to balance the effect of the earth's rotation, and to allow for the movement of the vehicle around curves. The use of a gyroscope avoids the significant errors which may occur if a pendulum is used as a datum.

Measurements of curvature, gauge and cant are obtained as a.c. signals from synchro-type pick-offs. These signals are linearly demodulated and the resulting d.c. signals applied to high-sensitivity mirror galvanometers and recorded on a special photographic paper by the reflected beams of an ultra-violet light source. In addition to the main measurements, the record includes the speed of the vehicle, distance marking, facilities to indicate events such as stations and a space for making notes. The record, together with the play-back of a previous record are both fed through the recorder by a drive taken from one of the axle-boxes; a choice of scales is provided.

The Vehicle

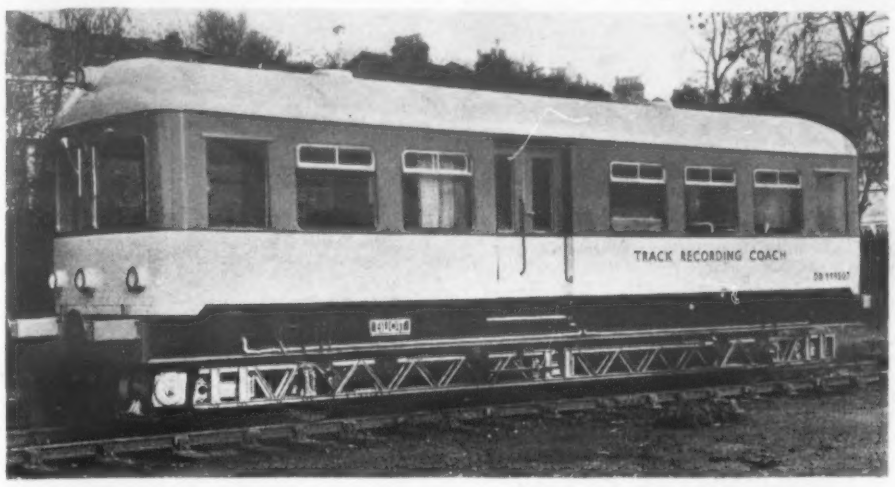
The coach was built by D. Wickham and Co., Limited, Ware. It is a four-wheeled vehicle similar to the railbuses already in service on various regions of British Railways. It has a driver's and observer's position at each end, washing and toilet facilities, a Calor gas cooker and cupboards. Propulsion is by a Meadows 97-b.h.p. underfloor diesel engine driving through a centrifugal clutch and an epicyclic gearbox to the forward and reverse gearbox on the driving axle.

As an adequate axle load was needed to detect voids under the sleepers the weight of the vehicle has been made up by using very substantial framing to give a load of 12 tons on each axle. The body is mounted directly on to this frame and is of fabricated construction with double doors on each side near the centre of the vehicle. The length over headstocks is 38 ft., the width 9 ft. and the overall height from rail level 12 ft. 6 in. The main electrical supplies are provided by an Enfield diesel generator of 5 kW capacity at 230 volts d.c. and from this output a Vernon alternator gives the 400-cycle supplies for the gyroscope and synchros.

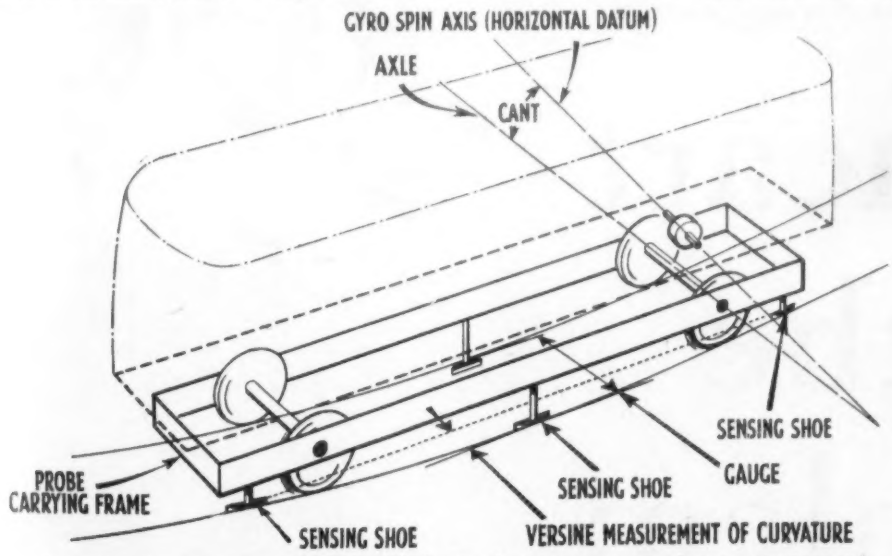
Wheels and axles are carried in Timken double tapered roller bearings, the axleboxes being secured to the frame by radius rods and the suspension is by overslung laminated springs carried in hangers fitted with rubber sandwich inserts. To improve the accuracy of cant measurement the wheels are coned to a taper of 1 in 100; the wheel diameter is 3 ft. and the total wheelbase 24 ft. In order that the vehicle should be easily recognisable it has been finished in a vivid livery.

In view of the continuity, speed and accuracy with which the new unit can furnish information, there is little doubt that it will effect big economies by pin-pointing the work to be done by the permanent-way staff. Indeed, it would seem at this juncture that the biggest problem presented will be for the staff who analyse the records, to keep pace with the speed at which the new unit is capable of working.

Examples of the high accuracy obtained show that measurement of curvature down to 4 chains minimum radius can be made with an accuracy of plus or minus 1/20 in. on versines up to 1⅜ in. on a 33-ft. chord and plus or minus 3 per cent thereafter. Measurement of cant expressed as inches of superelevation, up to a maximum of 7½ in. (7 per cent) has an accuracy of plus or minus ⅛ in. (=7½ min. of angle) and gauge, measured as deviation from standard (4 ft. 8½ in.) over range from 4 ft. 8 in. to 4 ft. 10 in. has an accuracy of plus or minus $\frac{1}{12}$ in.



The new Elliott-equipped track recording coach for British Railways built by Wickham of Ware



Diagrammatic representation of the coach showing how measurements of cant, curvature and gauge are taken

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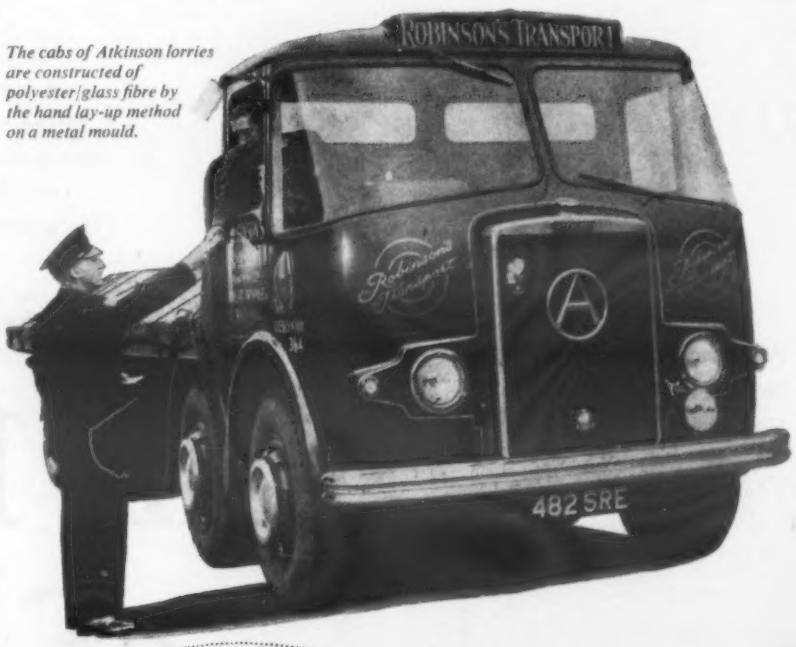

Atkinsons say yes to Polyester!

with their handsome cab moulded from structural plastics

Cabs for commercial vehicles are ideally made of structural plastics. Atkinsons Vehicles Ltd., of Walton-le-Dale, are now constructing the cabs of their diesel lorries with Beetle polyester resin/glass fibre, and the example shown —one of a fleet of new vehicles supplied to Robinson's Transport (New Worley) Ltd.—fully exploits the advantages of structural plastics. The cab is of one-piece construction, giving lightness, strength, and durability. Any knocks or damage can be easily and cheaply repaired.

Atkinson Vehicles Ltd. now fit lighter, more durable cabs than hitherto, and the net weights of their vehicles are reduced with advantage to their payload capacity.

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This is typical of the extra service being obtained from our CY Alloy Brake Blocks—which although remarkably resistant to wear, have no adverse effect on loco tyres. This is one of our most popular applications. After exhaustive tests many of the best known manufacturers of locomotives fit Cy brake blocks as standard.

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RATES.—The minimum charge for classified advertisements is 7s. for 14 words or less, and 6d. for each additional word. The name and address of the advertiser is charged at the same rate. If a box number is used 2s. extra is charged to cover our name and address and postage. If set in paragraph form each paragraph is estimated separately. Official Notices and semi-display in the classified columns are charged at the rate of 40s. per single column inch.

SITUATIONS VACANT

DISPATCH MANAGER required for company manufacturing number of concrete products in Abingdon, Berkshire. Preference given to those having experience of this industry. Applications in full including salary required to R. J. Mullard, Cowley Concrete Company, Limited, Radley Road, Abingdon, Berks.

CLERK possessing initiative and desire for steady advancement is required for Transport Department in London. Previous experience not essential, training will be given. Progressive salary scale, good conditions of employment. Write, giving full particulars to: Personnel Manager, Schweppes, Limited, 1-6 Connaught Place, London, W.2.

A LEADING oil company seek for the Midlands (based Birmingham) a personable, energetic AUTOMOTIVE ENGINEER for technical sales work in the motor transport field. Aged 30-40. H.N.C. an advantage. Also appropriate apprenticeship and five years' responsible automotive engineering experience, which must include experience of motor transport fleet operation. Necessary training will be given, but the work calls for initiative and self-reliance. Excellent prospects, competitive salary, pension scheme and other benefits. Application in confidence to Box No. 3812, MODERN TRANSPORT, 3-16 Woburn Place, London, W.C.1.

PUBLICATION

THE History of Wagons-Lits 1875-1955, by George Behrend, containing 31 illustrations. Price 9s. 6d. From your bookseller or direct from the publishers, MODERN TRANSPORT, 3-16 Woburn Place, London, W.C.1.

LORRY—BUS—COACH

Brighton Pooling Scheme Urged

THE special committee set up by Brighton Town Council five years ago to consider the future of the local passenger transport services has submitted its final conclusions to the Council. It recommends a traffic and revenue pooling scheme for the three operators, Brighton Corporation Transport Department, the Brighton, Hove and District Omnibus Co., Limited, and Southdown Motor Services, Limited. The committee says the point has been reached when final negotiations can start for a pooling of the three operators. It is convinced that the only lines these negotiations can follow is the retention of the identity and internal administrative arrangements of each of the operators, with a common policy for operation and a common pool for revenue.

The advantages would be:

(a) An area of operation serving the five towns of Brighton, Hove, Portslade, Shoreham, and Southwick;
(b) A possible end to the restrictive arrangements under the agreement put upon the Corporation and Brighton, Hove and District on the town outskirts by Southdown;
(c) An end to many of the higher protective fares charged by Southdown when it runs over common routes;
(d) An end to wasteful competition between Corporation, and Brighton, Hove and District buses and Southdown.

Negotiations should start as soon as possible to secure an agreement between the three operators for pooling arrangements, says the report.

One of 10 Leyland Titans with 62-seat M.C.W. bodies now being delivered to Bournemouth Corporation; right, another newcomer to the Bournemouth fleet is this B.U.T. trolleybus, also with M.C.W. bodywork, which entered service on June 1 together with a similar vehicle. Both were previously operated by the Brighton, Hove and District Omnibus Co., Limited, and have been fitted with standard Bournemouth indicators, but, unlike the rest of that undertaking's fleet, they have no front exit

Air-Coach Service to Devon Resorts

AN express service is to be operated by the Devon General Omnibus and Touring Co., Limited, between Exeter Airport and Paignton, serving intervening South Devon coast towns, for the convenience of tourists travelling from the north by air. Wallace Arnold Tours (Devon), Limited, was earlier this year refused a similar application. Tourists will be arriving at Exeter Airport from Leeds and Liverpool by Starways air liners and North-South Airlines. Wallace Arnold withdrew its objection to the Devon General application. The throughout journey time will be about three hours.

Leeds Passenger Decline

THERE was a 1.42 per cent fall, from 208.4 to 205.5 million, in the number of passengers carried by Leeds City Transport in the year ended March 31, 1959, compared with the previous financial year; a small part of the decline may be accounted for by the development of cross-city bus services (which save changes) in replacement of trams. The general manager, Mr. A. B. Findlay, says that another contributory factor was the rapid increase in the use of personal transport. Scooters are at present selling at the rate of 100,000 a year and at least a third of the owners are women. As a result of another year's successful working it has been possible to reduce the accumulated deficit by £150,331, from £307,384 to £157,053.

Substandard Fares Increased

FARE increases in respect of routes on which fares are at present below standard have been authorised to the Trent Motor Traction Co., Limited, and Barton Transport, Limited, by the East Midland area Traffic Commissioners. They are designed to cover, in the case of Barton, £30,000 increased operational costs mainly caused by the wage award last October. For that company Mr. R. S. Whitby explained that fewer people were travelling on buses, and if present trends continued Barton would show a reduction of about 2 per cent on the year. He pointed out that its vehicle programme was not extravagant. The average age of single-deck vehicles was 9.36 years, and the average age of double-deckers 13 years. Mr. W. R. Hargrave, representing Trent, said that the October wage award would cost the company £57,000 a year. By allowances and economies they had reduced this figure to £37,000. The proposed increases would yield £30,000. Mr. Hargrave said that 47 per cent of the company's fares were affected by the proposal.

London Bus Wage Claim

UNION representatives of London busmen were this week discussing the reply of London Transport to their recent claim for a shorter working week and decided to seek another meeting with the L.T.E. The claim is for the present 84-hr. fortnight to be reduced to one of 80 hr. London Transport was not prepared to make any substantial concession, but offered to discuss the revision of certain working times.

N.A.L.G.O. and Bus Companies

SPEAKING at the opening of the annual conference of N.A.L.G.O. at Scarborough last week, the president, Mr. A. E. Nortrop, referred to its failure to secure recognition for collective bargaining purposes in passenger transport undertakings. There were hopeful signs, he said, that some negotiating machinery might soon be established in respect of staffs of companies in the B.T.C.-controlled Tilling group, but other employers in that industry had persistently rejected every approach by N.A.L.G.O., by the other trade unions concerned, and by the Minister of Labour, to join with them in establishing collective bargaining for their clerical and administrative workers. This attitude, said Mr. Nortrop, was incomprehensible in these enlightened days, when every other progressive industry had adopted collective bargaining as the only sound and fair way of settling terms and conditions of service. This failure was due "solely to the obstinate mediaevalism of the employers." They did not intend to abandon the fight.

Bus and Coach Developments

Further RM type buses are entering service with London Transport. By June 10 three more were at work on Route 8 and one on Route 11 while another had been allocated to Battersea Garage for driver training.

J. S. and S. M. Turner propose a daily service between Breach Barns Caravan Site and Waltham Abbey (Green Man) via Galley Hill and Upshire Road.

OFFICIAL NOTICE

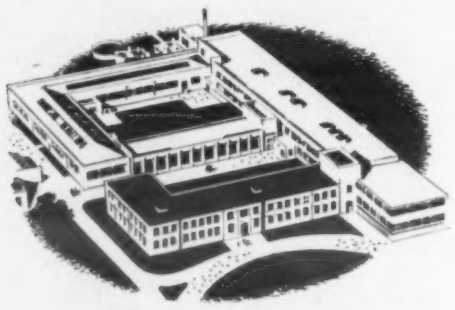
EAST KENT ROAD CAR COMPANY LIMITED

ASSISTANT SECRETARY

APPLICATIONS are invited from Qualified Accountants for the post of Assistant Secretary to East Kent Road Car Company Limited operating some 600 omnibuses on Stage and Express Services in East Kent and part of East Sussex.

Experience of taxation and practical knowledge of Secretarial matters would be an advantage. Salary would be dependent on qualifications and experience.

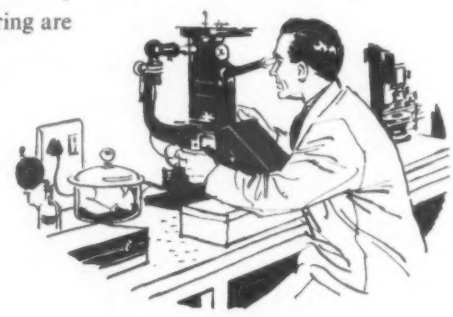
Applications (which should be under "Private" cover) giving details as to age, education, qualifications and experience should be addressed to the General Manager, East Kent Road Car Company Limited, Harbledown, Canterbury, Kent, and should reach him not later than first post on July 4, 1959. Applications should be marked "Assistant Secretary."



Investigation, Research, Development. These are the tools which every industry must use to ensure its continued progress and prosperity.

The Aluminium Industry is no exception. Scientific understanding wrested from nature the secret of making aluminium: scientific research is ensuring that the best possible use is made of this light, strong, durable metal.

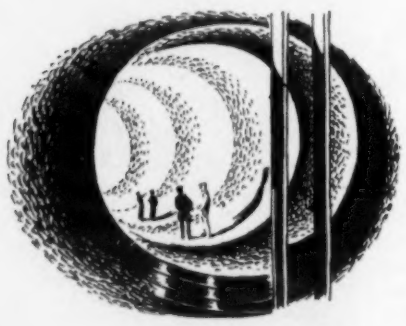
The modern and well-equipped laboratory at Banbury is only one of four laboratories maintained by the Aluminium Limited Group. All the techniques and specialised skills of modern science and engineering are used in these laboratories to extend the uses of aluminium.



At Banbury, metallurgists study continuous casting, corrosion problems and alloy formulation. Chemists investigate the problems of surface conditions, anodising, brightening and electro-plating. Engineers study fatigue and deformation and the techniques and "know how" of forging, rolling and extruding aluminium. Physicists study re-crystallation of cold-worked aluminium, heat transfer and methods of X-ray inspection.

The heart of the problem

Other departments apply the findings of the research specialists to the specific problems of design and welding, publish the results of the research programme to our associate companies and help the technical sales staff to solve the day-to-day problems that customers face.



This research and development work done at the Banbury Laboratories ultimately benefits British industry as a whole. These facilities are costly and represent the application of scientific and industrial skill of the very highest kind. The laboratories of the Aluminium Limited Group of Companies are an investment in the future of the aluminium industry.

If you would like to take advantage of these facilities why not consult—

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An Aluminium Limited Company

OILFIELD VEHICLE

Thornycroft—Hands-England Combination for Argentina

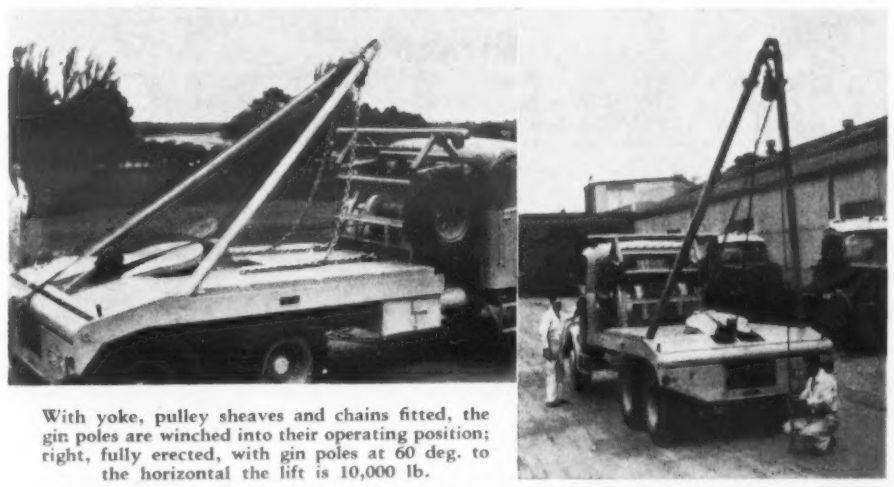
ORDERS for equipment for the oil industry placed with British producers have been steadily increasing over recent years and their value is currently running at a rate well over £100 million a year, of which about two-thirds is for export orders. Although British commercial vehicles are widely used by the oil industry, the current annual value of orders for automotive equipment running at about £9 million, the majority of vehicles ordered are for use in the distribution of petroleum products and relatively only a few are exported for use in oilfield areas.

Taking a turn of rope about the capstan provides mechanical assistance for raising and lowering the spare wheel; right, the gin poles are first raised manually by rope taken over pulley wheels on the headrest

Yet the British types that have been put to work in oilfields, principally of Scammell, Thornycroft, Leyland and A.E.C. manufacture, have given very good account of themselves and with the development and production by British manufacturers of the very specialised equipment required for oil exploration and recovery there appears scope for a substantial expansion of business in completely equipped oilfield vehicles, hitherto largely a monopoly of American producers.

Successful British Venture

A successful combination of this type, of entirely British design and manufacture, comprising a Thornycroft Trusty six-by-four overseas chassis and Hands-England body was recently selected by IDECO—the United States organisation, International Dresser Engineering Company Oilfields—to fill a requirement of YPF—Yacimientos Petroliferos Fiscales (State Oil Fields), Argentine, for which an order for 20 complete vehicles is now being executed, with Transport Equipment (Thornycroft), Limited, as the main contractor. The vehicle is described as a tractor unit with combination-type oilfields body and fifth-wheel coupling for semi-trailer, and is designed for a gross train weight of 32 tons. The semi-trailers are being produced by Nuovo Tigone—an Italian subsidiary of IDECO—and will be shipped directly to the Argentine, there to be mated with the tractors for the first time.



With yoke, pulley sheaves and chains fitted, the gin poles are winched into their operating position; right, fully erected, with gin poles at 60 deg. to the horizontal the lift is 10,000 lb.

Designed with generous reserves of strength to meet the most adverse operating conditions, the Thornycroft overseas Trusty six-by-four tractor RKN-QR6, with 17 ft. 3 in. wheelbase, required very little departure from standard to meet the IDECO specification. In fact the only changes are in the transmission, with the substitution of four-speed main and two-speed auxiliary gearboxes for the normal five- or six-speed single unit and a final-drive ratio of 8.25 to 1 instead of 7.25 to 1, and the use of three instead of two C.A.V. paper-element fuel filters.

The Trusty is based on a massive frame having channel-section sidemembers 11 in. by 3½ in. by $\frac{5}{8}$ in. with 6-ft. long channel-section flitches, also $\frac{5}{16}$ in. thick, welded into the main members over the bogie. The frame is heavily braced at the rear end for support of the fifth wheel coupling; part of the bracing structure forms the anchorage for a towing hook for use when drawing independent trailers. The front axle is an I-section forging mounted through conventional semi-elliptic laminated springs and single semi-elliptics on each side form the support for the fully articulating double-drive bogie having overhead-worm axles with 7¾-in. centres. Marles Adamant cam-and-double-roller steering gear has Clayton Dewandre power assistance with integral servo valve. Clayton Dewandre air-pressure brake actuation equipment uses the dual brake valve, one half of the system and one air reservoir serving front and intermediate axles and the other serving the tractor rear and trailer axles. Total brake lining area on the tractor is 1,660 sq. in. and a multi-pull handbrake is mechanically connected to the two axles of the bogie. Tyres fitted in this application are 11.00-24 14-ply rating Dunlop Power Grip, with twins on the bogie axles.

The power unit is the Thornycroft QR6 six-cylinder direct-injection diesel engine having a displacement of 600 cu. in. (9.83 litres), which produces a maximum net brake horsepower of 130 at 2,000 r.p.m. and net torque of 430 lb./ft. at 1,200 r.p.m. (The brake horsepower quoted is of course at the standard British automotive rating; based on more loosely defined American standards the QR6 could be rated at about 20 per cent higher maximum output.) Standard features of the engine that ensure satisfactory operation in the hot and dusty conditions likely to be met in the present application are the Thornycroft patented differential cooling system, which has a total coolant capacity of 13 gal., 8-gal. capacity sump with twin full-flow filters in the pressure lubrication system and a heavy-duty oil-bath cleaner on the air intake.

Transmission is through a 16-in. diameter single dryplate clutch, a four-speed constant-mesh gearbox having forward ratios of 6.07, 3.2, 1.69 and 1 to 1 and two-speed auxiliary gearbox giving direct drive or a 1.76 to 1 step down. The auxiliary gearbox also provides the control for the full-torque power take-off. Drive to the two bogie axles is through three open tubular shafts having needle-roller-bearing universals and a flexibly mounted intermediate bearing. Assuming an average 8-per cent run-up of the mechanical governor, the eight-speed transmission gives the Trusty a range of speeds at maximum engine revolutions from about

(*Continued on page* 13)

Loaded to about 20 tons gross the Trusty proved lively and light to handle on the rough track at Bagshot Heath

THE NEW CS3 RANGE

... The Leyland COMET

- All-steel Vista-Vue cab
- 100 h.p. 6-cyl. diesel
- 5-speed gearbox with optional 6th speed overdrive
- Hub-reduction rear axle
- Power boosted braking
- Low initial cost

an improved 12-ton g.v.w. series at the same reduced price

Here is the new version of the world-famous 12-ton g.v.w. Comet—so improved in specification as to be virtually a new model. Yet it is being offered at the same attractive price as that to which the previous Comets were recently reduced.
The power and wide margin of performance of the wear-resistant Leyland O.350 engine is now matched by more powerful brakes and the sturdiness of the new double-reduction axle having the second reduction in the hubs.
Add to this the comfort and safety of the new modern-styled Vista-Vue cab with panoramic vision, electric instrumentation, fully-adjustable driver's seat together with the built-in provision for high-volume heating and demisting and you have the greatest value in road transport today.
Write now for full details and a demonstration.

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Hardy Spicer Propeller Shafts and Universal Joints—tried, proved and tested over the years on all forms of commercial vehicles—are here shown incorporated in the drive line of the latest A.E.C. Mammoth Major.

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TRANSMISSION EQUIPMENT

Standard equipment on most British trucks and on many manufactured overseas

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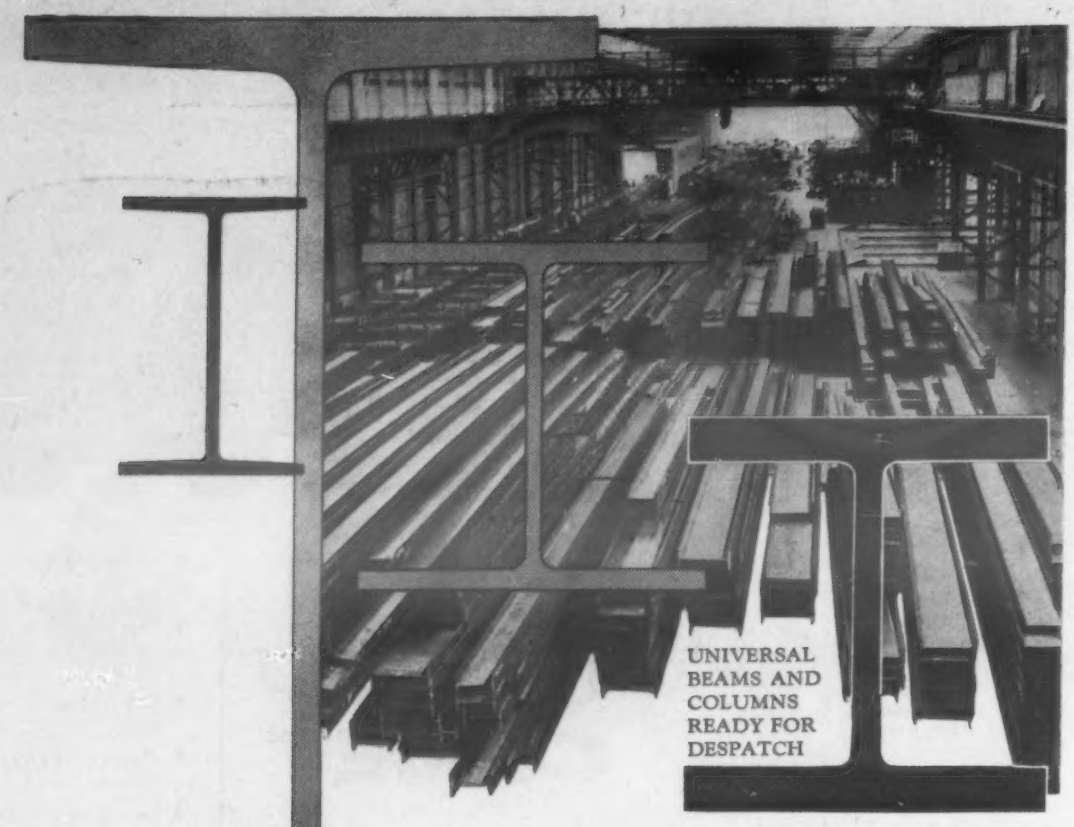


DELIVERIES FROM THE UNIVERSAL BEAM MILL

The new beam and column sections, in different weights, are now being rolled in substantial quantities and are available for early delivery.
The beams include the largest rolled in Europe.
Columns are also rolled in 'families' of suitably related sections for multi-storey buildings.
The laborious riveting-on of extra flange-plates is generally unnecessary; a simple rolled section does the job better, saving steel and labour.
When the limit of the plain beams is reached, the plated beams are still economical of steel.
Universal beams have opened a new field for steel-work designers, offering far-reaching economies and increasing the efficiency of the structure.

DORMAN LONG

The Bedford Van gets a Big Brother...

the new long-wheelbase

BEDFORD '102'

This is the new Bedford '102' . . . an additional model in the Bedford 10/12 cwt. and 15 cwt. van range — 102" wheelbase, 12" EXTRA length, 20% EXTRA load space. This is the van that gives you extra space for light, bulky loads . . . 171 cubic feet with 8 ft. length *behind* the driver's seat . . . This is the van with the extra-wide external sliding doors . . . This is the van for YOUR loads. See it now at your local Bedford dealer's showrooms.

The Bedford van range

90 in. wheelbase models:
10/12 cwt. van **£445**
15 cwt. van **£452**

NEW 102 in. wheelbase models:
10/12 cwt. van **£470**
15 cwt. van **£477**

All four models are also available in chassis form at prices ranging from £345.

Built better by
Vauxhall Motors Limited, Luton, Beds.

The new Bedford '102'—
12" extra length—20% extra load space

ELEVATING BODIES

Rootes Design Eases Aircraft Loading

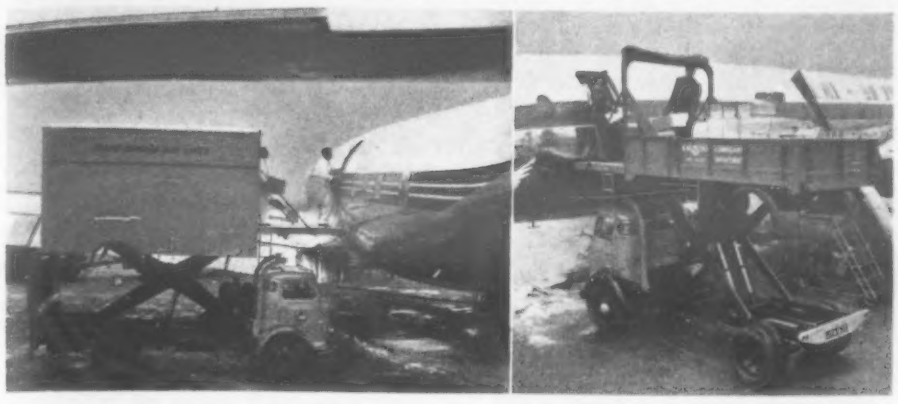
THE lightness of aluminium, already widely appreciated in the manufacture of commercial vehicles, is of even greater importance in a new range of elevating bodies for vans and lorries designed by Rootes Motors, Limited. Designated Cargo-Lift, the range has been designed primarily for aircraft loading and servicing. The vehicles have a conventional four-wheeled chassis and cab, but the body is attached by pairs of scissor-like linkages. Lifting force applied by two hydraulic rams interposed between a chassis crossmember and a crossbar on the scissors links enables the body to be raised to any desired height up to a maximum (according to type) of 10 ft. 4 in. or 13 ft.

An additional feature is available in the form of a hinged platform extending forward over the cab of the vehicle to the aircraft loading hatch. This platform is guided by rubber wheels engaging in curved channel members attached to the cab. As the body is elevated, the rubber wheels follow the guides until the platform is horizontal, when they disengage from the channels and the platform remains in the horizontal position, rising with the body. Lowering automatically brings about the reverse action. An alternative forward platform is of the cantilever type mounted horizontally above the cab. It rises with the body once the floor has reached the level of the platform.

Two Basic Types

Two basic variations of the vehicle are available; a van body mounted on a Commer 5-ton chassis-cab, and an open lorry body mounted on a Karrier Gamecock chassis-cab. Refinements available include a power-operated tailboard lift for the van body and a folding auxiliary side-loading bridge.

It is obviously important that the body should be as light as possible and the bodybuilder, Wilsdon and Co., Limited, of Solihull, has made wide use of aluminium alloys in its construction. The van is panelled in Noral 2S½H aluminium alloy on a framework of Noral B51SWP aluminium alloy top-hat extruded sections. The lorry body also has a Noral B51SWP framework and is panelled in Noral B51SWP sheet. Suppliers of the aluminium alloys are Northern Aluminium Co., Limited. Fourteen of these vehicles have now been built and are in service with various airlines. One operator reports that the unit has reduced commissary equipment handling time by 50 per cent.



Commer 5-ton Cargo-Lift van with automatically folding loading bridge and, right, an open Cargo-Lift body on Karrier Gamecock chassis

Birthday Honours List

TRANSPORT AND INDUSTRY

AMONG the names which appeared in the list of H.M. the Queen's Birthday Honours was a number connected with transport and its allied industries and some of these are set out below.

BARON

Forster, Sir John, Q.C., president of the Industrial Court since 1946.

BARONET

Bibby, Major Sir (Arthur) Harold, for political services in Liverpool and Cheshire (chairman, Bibby Line, Limited).

KNIGHTS BACHELOR

Leslie Carr Gamage, chairman and managing director, General Electric Co., Limited.

Arthur Maynard Chesterfield Jenour, for political and public services in Monmouthshire (chairman and joint managing director, Beynon Shipping Co., Limited).

James Reginald Pearson, deputy chairman, Vauxhall Motors, Limited.

Kenneth Huson Preston, chairman, Stone-Platt Industries, Limited.

Robert Desmond Ropner, chairman, General Council of British Shipping.

William Giles Newsom Walker, chairman and joint managing director, Jute Industries, Limited (member, Scottish Area Board, B.T.C.).

ORDER OF THE BATH

K.C.B.

William Strath, Permanent Secretary, Ministry of Supply.

C.B.

J. E. Hampson, deputy secretary, Ministry of Transport.

ORDER OF ST. MICHAEL AND ST. GEORGE

C.M.G.

M. H. Varvill, Permanent Secretary, Ministry of Transport, Federation of Nigeria.

ORDER OF THE BRITISH EMPIRE

C.B.E.

D. G. Anderson, Director-General, Department of Civil Aviation, Australia; R. W. F. T. Berkeley, director and general manager, Belfast Steamship Co., Limited; G. R. Chappel, chief superintendent engineer, Furness, Withy and Co., Limited; R. W. Cook, head of shipping department, Office of Crown Agents; Group Captain G. R. Scott-Farnie, managing director, International Aeradio, Limited; K. G. Fenelon, lately statistical expert to Ministry of Economics, Iraq; A. T. Gandell, general manager, New Zealand Railways; R. A. Kidd, county surveyor and director of planning, Nottinghamshire; C. F. L. King, chairman, Hire Purchase Information, Limited (director and general manager, British Wagon Co., Limited).

N. McCusker, Commissioner for Railways, New South Wales; W. A. Muddell, chairman, Trent River Board; Captain J. H. Quick, chief nautical surveyor, Ministry of Transport; G. W. Quick Smith, member, board of management, British Road Services; E. C. Wheeldon, managing director, Westland Aircraft, Limited; A. H. White, deputy chairman and managing director, Lithgows, Limited.

O.B.E.

G. E. Bryce, chief test pilot, Vickers-Armstrongs (Aircraft), Limited; E. J. Dickie, deputy director of operations, Civil Aviation Control and Navigation Directorate, Ministry of Transport; R. J. Gammon, director of road transport, Sierra Leone; P. H. Hicks, assistant chief engineer (construction), East African Railways and Harbours; H. B. Irving, chairman, noise research committee, Aeronautical Research Council; W. L. Ives, principal traffic officer, British Transport Waterways; T. O'Leary, national secretary (docks group), Transport and General Workers' Union; H. F. S. Rickerby, senior chief executive officer, Ministry of Transport; C. S. Robertson, district superintendent, Bulawayo, Rhodesia Railways; W. A. J. Thorn, deputy director, Telecommunications, Ministry of Transport; J. T. Turbayne, general manager, British Travel Association, U.S.A.

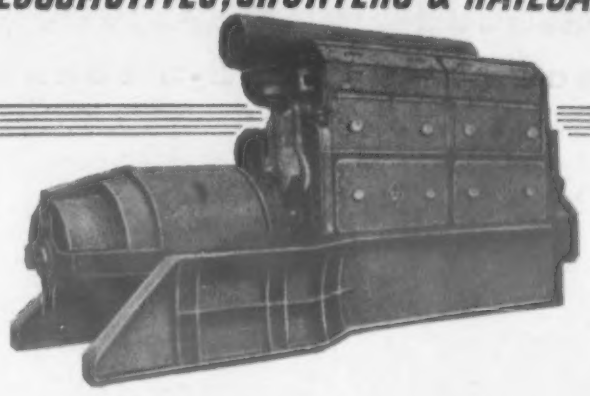
M.B.E.

S. O. Akinjobi, for services to civil aviation in the Federation of Nigeria; P. Armstrong, superintendent, erecting shop, W. H. Allen, Sons and Co., Limited; W. C. E. Bell, manager, Dorman Long (Steel), Limited; E. Berry, deputy manager, contracts department, Vickers-Armstrongs, Limited; J. H. Burton, production manager, asbestos-cement moulded goods division, Turners Asbestos Cement Co., Limited; G. Chriseson, lately chief administrative officer, roads and bridges department, Shropshire County Council; Captain J. F. Clement, chairman, executive committee, pilots' section, Transport and General Workers' Union; H. J. Cole, formerly senior clerk, Department of Civil Aviation, Australia; H. Collier, surveyor to Preston R.D.C.; E. C. Cookson, assistant civil engineer, Western Region, B.R.; M. T. Corrigan, executive officer, Ministry of Transport.

F. P. Delandro, Roseville, New South Wales, for services to the motor industry; C. Donald, main-grade engineer, Ministry of Transport; D. Cameron-Douglas, senior investigating officer, Ministry of Transport; G. Duckworth, traffic manager, Southdown Motor Services, Limited; T. Dwyer, senior executive officer, Crown Agents; R. R. Galloway, senior survey clerk, West of Scotland district, Ministry of Transport; L. H. Hammond, driving and traffic examiner, Metropolitan Traffic Area, Ministry of Transport; H. Harvey, acting fire superintendent, East African Railways and Harbours; S. F. Hodge, manager, Sharjah, International Aeradio, Limited; E. R. Hooper, chief inspector, Saunders-Roe (Anglesey), Limited; M. G. Housego, information officer, London Airport, Ministry of Transport; A. C. Hughes, agency and interline manager, B.O.A.C.

(*Continued on page* 9)

H&W Diesel Engines
for LOCOMOTIVES, SHUNTERS & RAILCARS



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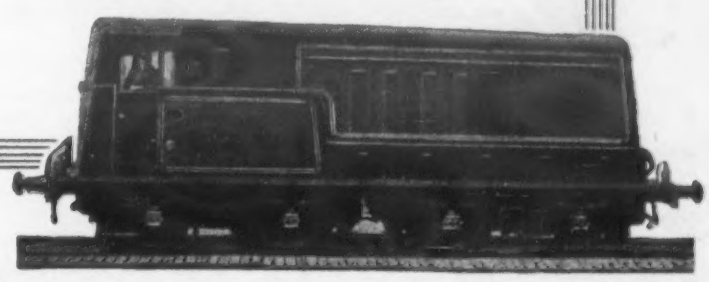
Supplied as straight in-line or 'V' type units in powers from 250 b.h.p. to 2,000 b.h.p.



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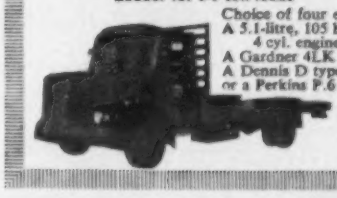

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A Gardner 4LK engine.
A Dennis D type Petrol or a Perkins P.6 engine.

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LOW LOADER
for 5-6 ton loads

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NEWS FROM ALL QUARTERS

Wallingford Service Withdrawn

Passenger train service between Cholsey and Moulsford, and Wallingford was withdrawn on and from June 15, Wallingford Station being closed for passengers. The line, which was opened in 1866, was 2¾ miles long, and was served by 11 trains daily in each direction, with additional services on Saturdays. There was no Sunday service.

Newsprint in Rubber-Lined Wagons

The Atlantic Coast Line Railroad of Georgia, a line specialising in the carriage of newsprint, has brought into use special goods wagons for its transport. As newsprint is apt to be damaged in wagons of conventional design, the company has designed all-steel wagons, the floors and walls of which are lined with a synthetic rubber manufactured and patented by E. I. Du Pont de Nemours. One hundred of the newsprint wagons have been put into service and a further 300 are being built.

Electric TEE Expresses

The Swiss Federal Railways announced in Berne last week that in conjunction with the French and Italian railways it is to bring into service in 1961 electric Trans-Europ-Express (TEE) trains to operate direct luxury express services between north-western and southern Europe. There will be services between Milan, Zurich and Paris via the St. Gotthard and Simplon tunnels. The rolling stock will be adapted to use four types of current supply—1,500 and 3,000 volts d.c., 15,000 volts 16⅔ cycles a.c., and 25,000 volts 50 cycles a.c.

Cologne Bridge Opened

On the occasion of the opening of the Hohenzollern Bridge in Cologne last month several noteworthy personalities were present, viz. the Chancellor of the German Federal Republic, Dr. Adenauer, the Federal Minister of Transport, the Prime Minister of Rhineland-Westphalia, and the President of the German Federal Railways, Dr. Oeftering, and other representatives of the Government and industry. Dr. Oeftering emphasised that the electrified network now measures 2,144 miles and that it is possible to travel by electric trains from Northern Germany to Southern Italy.

Fifth New L.M.R. Depot Begun

Work has begun on a new London Midland Region goods depot at Warrington Bank Quay to deal with sundries traffic, also on a new forwarded goods shed and office block at Liverpool Huskisson. These are two of 15 similar depots which are being built by the London Midland under its massive freight reorganisation plan. The work begun in February on similar depots at Manchester Oldham Road, Chester, Oldham Clegg Street and Liverpool Wavertree is up to schedule. It is expected that these four depots will be in operation before the end of the year. It will be remembered that the London Midland Region is spending some £5½ million on this project to enable it to deal more efficiently and expeditiously with goods and parcels traffic. Warrington Bank Quay will deal with the sundries traffic and combine the present duties of Bank Quay and Central depots.

Canadian Royal Train

H.M. Queen Elizabeth and the Duke of Edinburgh will be in familiar surroundings while travelling on the royal train on their Canadian tour this summer. The royal visitors will occupy two railway cars which they used on their 1951 tour. Normally used by the Governor-General, the cars were also the travelling home of the late King George VI and Queen Elizabeth in 1939 and of Princess Margaret last year.

Acton Bridge Reconstruction

The Ministry of Transport has made a grant of £49,000 to Middlesex County Council towards the cost (£100,000) of building a new bridge to take Old Oak Common Lane over the London Midland Region railway lines at East Acton. The old bridge has a carriageway only 16 ft. wide and stands on a bend where visibility is reduced almost to zero. The new bridge will take a 30-ft. carriageway and two 10-ft. wide footways and it will be on an improved alignment.

Four New Halts on Speyside Branch

Four new halts have been opened for the Speyside diesel railcar service between Elgin and Aviemore. Journeys, however, will be quicker than at present; overall timings are to be accelerated by up to 15 min. The new halts are at Imperial Cottages and at Gilbey's Cottages, between Carron and Knockando; at Dalry Farm between Advie and Cromdale; and at Ballifurth Farm, between Grantown-on-Spey East and Nethybridge.

Channel Tunnel Report

Schemes for road as well as rail traffic between France and Britain through a Channel Tunnel are still being studied, the Channel Tunnel study group has announced. The group, composed of British, American and French experts, described reports from London that the tunnel would be exclusively for rail traffic as "tendentious or premature." The study group has not yet reached any precise conclusion, either on the cost of the work or the volume of traffic possible, or on the possibility of building in the first stage the road tunnel which it is studying parallel with the rail tunnel. The next meeting of the study group would be in September and it was hoped that conclusions would be reached then, the announcement said.

Assured Delivery To and From Tyneside

For the first time the Scottish Region assured arrival service for freight traffic extends across the border to North East England. It started on June 15, and serves Glasgow—Newcastle—Gateshead, Edinburgh—Newcastle—Gateshead and vice versa. Originating in Scotland the scheme has been in operation for just more than a year. It gives an assurance to traders that traffic will be available to their customers the day following dispatch. Traders will be able to hand over their traffic to the railway cartage service or direct to 15 stations in Glasgow, and the same number in Edinburgh each evening in the confident knowledge that their goods will be delivered to their customer's door next morning in Newcastle or Gateshead.

METRO-CAMMELL

BUILDERS OF WAGONS FOR PAKISTAN RAILWAYS

1365 "CR" Type Covered Wagons are now in course of delivery to the Government of Pakistan.

METROPOLITAN-CAMMELL CARRIAGE & WAGON CO. LTD.
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COMMERCIAL AVIATION

Twin-Dart Aircraft for B.E.A.

YEADON-DUBLIN SERVICE

SUBJECT to the completion of final arrangements British European Airways is to take three Handley Page Dart Heralds for operation on some of its Scottish services. Delivery is expected in the summer of 1960. It was stated in a written Parliamentary reply by Mr. Aubrey Jones, Minister of Supply, that negotiations for a similar arrangement in respect of the Avro 748 had been opened. Both machines are powered by two Rolls-Royce Darts. The 748 prototype should, according to present plans, make its first flight next February.

Sheffield Considers Air Transport

Sheffield Parliamentary and General Purposes Committee considered air transport recently and concluded that the city needs helicopter landing grounds in preference to aerodrome facilities at Penistone. The committee decided to secure the latest information on suitable helicopters.

B.K.S. to Fly Yeadon—Dublin

B.K.S. Air Transport has announced receipt of final permission from the British and Irish Governments to operate from the Leeds—Bradford Airport at Yeadon to Dublin. The service is to start on Monday, July 6. It will be operated three times a week on Mondays, Wednesdays and Fridays all the year round by Douglas DC3s. An important point is that it will link up with the Aerlinte Eireann transatlantic service.

Long Non-stop Flight by Viscount

A Vickers Viscount 700 series turboprop short-medium haul air liner recently flew the 1,684 miles from Gander to Santa Maria non-stop in 5 hr. 10 min. at an average speed of nearly 330 m.p.h. When the aircraft arrived at the Azores it had a fuel reserve of 600 gallons—enough to take it a further 700 miles to Lisbon had it been desired. The aircraft, which carried two Rolls-Royce Dart engines and a quantity of spares as freight, was en route to Kuwait where it is entering service with Kuwait Airways. The Viscount, a V.702, was formerly operated by British West Indian Airways.

Flying Tiger Traffic in April

Domestic air freight revenues of The Flying Tiger Line for April totalled $1,190,064, a gain of 27.1 per cent over the same month last year, it has been announced by Mr. John L. Higgins, vice-president. The cumulative gain for the first four months of 1959, compared to a year ago, was 36.2 per cent. Although the rate of gain in April was slightly below the preceding months, Mr. Higgins said the improvement was more uniform with 14 out of 17 reporting stations showing increases over last year. Stations showing the greatest rate of gain were Detroit, Cleveland and Philadelphia.

Canadair 540s Complete Tour

Completion on schedule of 80,000 miles of flight demonstration by two Napier Eland-powered Canadair 540s was announced recently by Canadair officials in Montreal, who said that the intensive 10-week coverage of North and South American aviation interests was achieved with an impressively trouble-free performance from the Napier Eland power plants. One aircraft visited more than 40 major cities in the United States and Canada while the second flew approximately 26,000 miles in South America during 30 days away from its base in Montreal. Several route evaluations were made during the course of the demonstrations, one of which resulted in the lease arrangement with Napier by which Allegheny Airlines will begin regular schedules with the Canadair 540 in July.

Traffic at British Airports in April

Air transport movements at United Kingdom aerodromes in April, 1959, numbered 24,124, a decrease of 4 per cent compared with April last year; the number of passengers handled increased by 11 per cent to 548,256. Freight picked up and set down amounted to 15,634 short tons, an increase of 26 per cent. The passenger increase is significant in view of the fact that Easter occurred in April last year. Airports in the London area as a whole showed a decrease of 6 per cent in air transport movements and an increase of 14 per cent in the number of passengers handled. At London Airport there were 8,994 air transport movements, a decrease of 8 per cent compared with April last year and 302,002 passengers were handled, an increase of 10 per cent. Several airports showed considerable increases in passenger traffic over April, 1958, and amongst these were Edinburgh (Turnhouse) by 37 per cent to 11,060, Glasgow (Renfrew) by 22 per cent to 42,828 and Manchester (Ringway) by 19 per cent to 36,267. Other large increases in passenger traffic were at Bournemouth (Hurn) by 424 per cent to 7,734, Newcastle (Woolsington) by 115 per cent to 2,506, Leeds-Bradford (Yeadon) by 102 per cent to 910, Blackpool (Squires Gate) by 58 per cent to 1,382 and Stansted by 50 per cent to 2,211. The large increase in passenger traffic at Bournemouth (Hurn) was due to a large extent to the transfer of some services from Southampton (Eastleigh).

Information Services Meeting

A four-week meeting devoted to a revision of the international standards which govern the world-wide distribution of aeronautical information to airmen and the preparation of aeronautical navigation charts has completed its work in Montreal. This meeting, of the aeronautical information services and aeronautical charts division of the International Civil Aviation Organisation, was attended by representatives of 23 nations and three international organisations. It has recommended to the I.C.A.O. Air Navigation Commission that as regards aeronautical information services certain changes were necessary in the international standards and recommended practices on this subject to meet the needs of present day and future air operations. There should be an "Aeronautical Information Circular" which would report separately on information of a purely administrative or advisory nature. The division prepared specifications for 15 types of aeronautical charts for use in international air navigation. Each I.C.A.O. member state should accept the responsibility to make data concerning its territories available to another state to allow the latter to prepare aeronautical charts covering the territory of more than one state. New types of charts recommended included a 1:2,000,000 scale navigation chart, a radio navigation chart, a terminal area chart and a special aerodrome chart for aerodromes with complicated movement areas. Also recommended were certain changes to the existing international standards on chart symbols.

MUNICIPAL PASSENGER TRANSPORT ASSOCIATION

Mr. FRANK S. TAYLOR, M.Inst.T.

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Elsewhere in this issue we set out the programme for the annual conference of the Municipal Passenger Transport Association which will this year be held at Edinburgh from September 21 to 25 and will be presided over by Mr. Frank S. Taylor, general manager, Newcastle Corporation Transport and Electricity Undertaking. Born and bred in Northumberland, Mr. Taylor, who is 52, read economics at Durham University and, after early commercial training, joined the Newcastle Corporation Transport Undertaking in 1931. He became its deputy manager in 1946 and was appointed general manager in the following year. He was thus responsible for the postwar reorganisation of the undertaking including the completion of the tramway abandonment and the introduction of replacement bus and trolleybus services. Serving the city of Newcastle and adjoining areas on Tyneside, the undertaking carries more than 500,000 passengers a day while it also has the unusual characteristic these days of continuing to be an electricity supplier, providing power for traction, street lighting, public buildings and corporation quays. A member of the Institute of Transport, Mr. Taylor is a former chairman of its Northern Section. He has long been closely concerned with multifarious activities of the Municipal Passenger Transport Association of which he was elected president last September. He is a member of the National Joint Council for the Road Passenger Transport Industry, of the National Joint Council for Craftsmen—Municipal Transport, and of the executive council of the Federation of Municipal Passenger Transport Employers. Apart from a strong affection for Northumbrian country and a keen interest in its well-being, he has a great enthusiasm for cricket, having captained South Northumberland and having ceased to play only seven years ago.

IN PARLIAMENT

Debate on Drivers' Hours

OPPOSITION CHARGES DECRIED

REPLYING to a debate on the allegedly widespread contravention of statutory driving hours, MR. G. R. H. NUGENT defended the law regarding prosecution of employers. His absolute liability for offences was essential, said Mr. Nugent, because otherwise it would be so difficult to secure a conviction that the law would be impossible to enforce. He had heard no evidence of widespread breaches of the law suggesting collusion between employers and employees. The present enforcement staff was adequate to get "a reasonable degree of observance." The charges brought by the Opposition were really based on "a complete fiction."

Loading Ban Report Soon

The London and Home Counties Traffic Advisory Committee had not yet completed its study of conditions at the 23 London sites where loading and unloading bans were proposed, said MR. G. R. H. NUGENT, Joint Parliamentary Secretary, Ministry of Transport. It was at present considering whether practical trials may be necessary, and they hoped to have its advice on this point within the next few weeks.

Aircraft Noise Problem

Replying to a question about aircraft take-off noise, the Minister of Transport said that we were living today "near the upper limits of noise levels." Very serious problems might arise from the concept of supersonic passenger aircraft. We must maintain a tolerable rate of noise for those people who live around airports, and he regarded that just as much as one of his duties as that of facilitating the entrance of aircraft to airports and their departure from airports.

Goods Vehicles at Parking Meters

MR. GRESHAM COOKE asked the Minister of Transport why, in his advice to local authorities regarding the making of parking places orders under the Road Traffic Act, 1956, he had only recommended them to make reasonable provision for commercial vehicles and not recommended that all metered parking bays should be available to all classes of vehicles, including goods vehicles, as in the Mayfair experiment. The advice was given in this way to preserve the discretion which the 1956 Act allowed to local authorities promoting such schemes, replied MR. G. R. H. NUGENT.

Rural Bus Committee

SIR ANTHONY HURD asked the Minister of Transport if he would appoint a member of the Women's Institute to the committee which was to inquire into the problems of rural transport services; and if the committee would be authorised to examine the working and finance of the post bus services in Switzerland and elsewhere. MR. G. NUGENT, the Joint Parliamentary Secretary, said that membership of the committee was not yet settled, but he would bear in mind the suggestion. As regards the second part of the question, its terms of reference were wide enough to include such a study if it wished.

Volume of Enforcement Work

MR. ERNEST DAVIES asked the Minister of Transport if, in view of the growth in the number of goods vehicles on the roads and the anticipated further increase, he would increase the number of officers engaged full-time on enforcement of the provisions of the Road Traffic Acts relating to goods vehicles and public service vehicles. The complement of full-time traffic examiners for enforcement was 100, of whom 95 were in post, replied MR. G. R. H. NUGENT, the Joint Parliamentary Secretary. In addition 17 driving and traffic examiners were now engaged on enforcement work. This number would be increased to 50 as soon as possible.

MR. DAVIES: Does the hon. gentleman recall that he has always given the undertaking that there will be an increase, and that the increase does not take place to any extent? Does he also recall that when I last raised this matter he said that the number of offences was increasing in proportion to the number of vehicles on the road? Does he still believe that the staff of 100 enforcement officers is sufficient to cope with those offences? Mr. Nugent denied that there was an increase in offences.

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BIRTHDAY HONOURS

(*Continued from page 7*)

G. W. King, chief draughtsman, outfit department, Furness Shipbuilding Co., Limited; R. J. Liddle, Rhodesia Railways representative in Elisabethville; G. D. McGlashan, senior assistant engine works manager, Alexander Stephen and Sons, Limited; J. H. Moore, welfare officer, B.O.A.C.; B. Pringle, manager of motor engineers, British Thomson-Houston Co., Limited; G. Reid, lately works manager, Scottish Oils, Limited; A. Rodger, electrical manager, Wm. Denny and Brothers, Limited; T. G. Sinclair, higher executive officer, Ministry of Transport; L. Sproat, operating officer, North Eastern Region, B.R.; Miss E. M. Stott, controller of typists, Ministry of Transport; P. W. Swindells, deputy chief heavy haulage manager, Pickfords; R. W. Taylor, manager, motor transport, Department of Public Works, Tanganyika; N. B. Thomas, engineer, Crown Agents; S. J. Treen, assistant manager, distribution department, Shell-Mex and B.P., Limited; R. E. G. Trembath, airport manager, Hargeisa, Somaliland; A. B. Wood, traffic superintendent and station superintendent, Isle of Man, B.E.A.; L. A. Wynn, assistant works manager, Ministry of Works and Transport, Western Region, Nigeria.

ROYAL VICTORIAN ORDER

K.C.V.O.

Bowes-Lyon, David (director, Dunlop Rubber Co., Limited).

QUEEN'S COMMENDATIONS FOR VALUABLE SERVICE IN THE AIR

W. Richardson, flight navigating officer, B.O.A.C.; R. Smith, flight engineering officer, B.O.A.C.

★

PUBLICATIONS RECEIVED

PLANNING MAP OF GREAT BRITAIN. Published by National Benzole Co., Limited, Mercury House, Knightsbridge, London, S.W.7, to complement the company's popular set of road maps. The planning map covers the whole country on a scale of 16 miles to 1 in. for journey planning, while the more detailed road maps are for use on the actual journey. The new planning map, which includes much useful information, retails at 1s. but it is included at no extra cost in every complete wallet of N.B. road maps, the price of which remains unaltered at 7s. 6d.

S.G.E. SIGNALLING INSTALLATIONS FOR BRITISH RAILWAYS. A new booklet produced by the Siemens and General Electric Railway Signal Co., Limited, East Lane, Wembley, which describes signalling installations carried out by the company for British Railways. The installations covered are those on the Glasgow Central low-level lines of the Scottish Region; on the Eastern Region electrified lines between Liverpool Street and Southend and Chelmsford; and on the new Temple Mills marshalling yard and its approaches, also on the Eastern Region. Text is supported by informative illustrations and maps and detailed track and signalling layout drawings of the Glasgow and Temple Mills installations are included.

TRANS-EUROPE CARAVAN

Bedford Sales Promotion Campaign

"THE most effective sales promotion campaign ever attempted in Portugal by anyone in the transport field." That is the comment of the distributors in Portugal on the Bedford Trans-Europe Caravan, which left that country recently after a 28-day tour covering 2,000 km. Displays and film shows were given in 39 different centres. The caravan of 14 different types of Bedford commercial vehicles, which left the United Kingdom on February 17 and started its tour of Portugal at the end of March, has now moved up through Spain and France to Belgium. After 12 days in that country it will cross the border to Holland, followed by a six-week tour of Denmark and Norway. Then come Sweden and Finland, where the tour will end in September.

R. F. Derviller, of the Vauxhall export sales department, who is in charge of the caravan, reports that in Portugal, where the law requires heavy lorries to be painted in drab colours, the brightly coloured Bedfords made a tremendous impression on the local populace. One old man even thought that war had broken out! This impression was heightened by the fact that in many towns the arrival of the caravan was announced by police sirens, the letting-off of a barrage of rockets and maroons and the full-blast services of the local band.

General Motors and its dealers, who sell and service Bedfords overseas, are co-operating to the full—supplying uniformed drivers, drawing up routes, arranging for demonstrations, organising advance publicity and servicing the vehicles. The lorries carry prominent sign boards, which are changed to the appropriate language when the convoy moves to the next country on the route. The mobile cinema shows films made by Vauxhall Motors, Limited, and by General Motors and these will soon be supplemented by a film record of the Portuguese part of the tour.

The 14 vehicles in the caravan represent a cross-section of the current Bedford range. Among them are three variants of the light van, including a Dormobile caravan and a 12-seat passenger vehicle. There are seven examples of the latest normal-control Bedford, with bodies ranging from a mobile parts showroom to an all-steel pick-up, and there are four forward-control Big Bedfords, including a rock dumper, a fuel tanker, a four-wheel-drive lorry and a Duple Super Vega coach.

The Bedford Trans-European caravan crossing the upper level of a triple-deck bridge spanning the Douro at Oporto; the railway uses the lower level of the two-deck upper section

SILICONE INSULATION

Machine Application by London Transport

WORKING successfully at Acton Works is a machine designed and built by London Transport for carrying out automatically the process of wrapping the conductors of railway traction motors with silicone insulating materials. Since reporting early in 1958 on the experimental work carried out by London Transport in the use of silicone materials for insulating railway traction motors, further progress has been made. Mention was then made of the decision to use a fully cured silicone elastomer-impregnated glass wrapper instead of half-lapped layers of silicone elastomer glass tape coated with a pressure-sensitive silicone adhesive for the slot portion of the earth insulation.

It was realised at the outset that difficulty would be experienced in applying this silicone wrapper by hand because of the possibility of an uneven wrap on the conductors making them oversize for fitting in the slot. A considerable amount of work has been carried out to design and build the present machine, which performs the wrapping process automatically and obviates the difficulty.

The wrapping machine is actuated by a system of cam-operated pneumatic valves, which function at an air pressure of 80 p.s.i. The valves allow air to pass to cylinders, which in turn operate a series of slides and rams horizontally and vertically to envelop the conductors in the wrapper. They are operated in sequence by the movement of a 12-position non-reversible rotary handle.

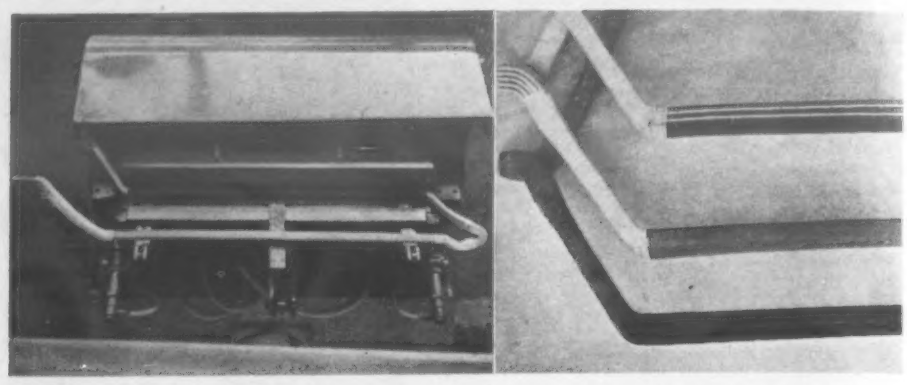
Machine Sequence

In the wrapping sequence the group of conductors is placed on the machine on a strip of the silicone wrapping material and positioned by means of horizontal and vertical rams. The horizontal rams move away and two slides move up the sides of the conductors enfolding the wrapper on three sides. The vertical ram is then removed from the top of the conductors while horizontal slides fold first one end of the wrapper and then the other over the conductors to form a lapped joint, after which the vertical ram is used again to consolidate the joint. The wrapped armature bar is removed from the machine for the final taping.

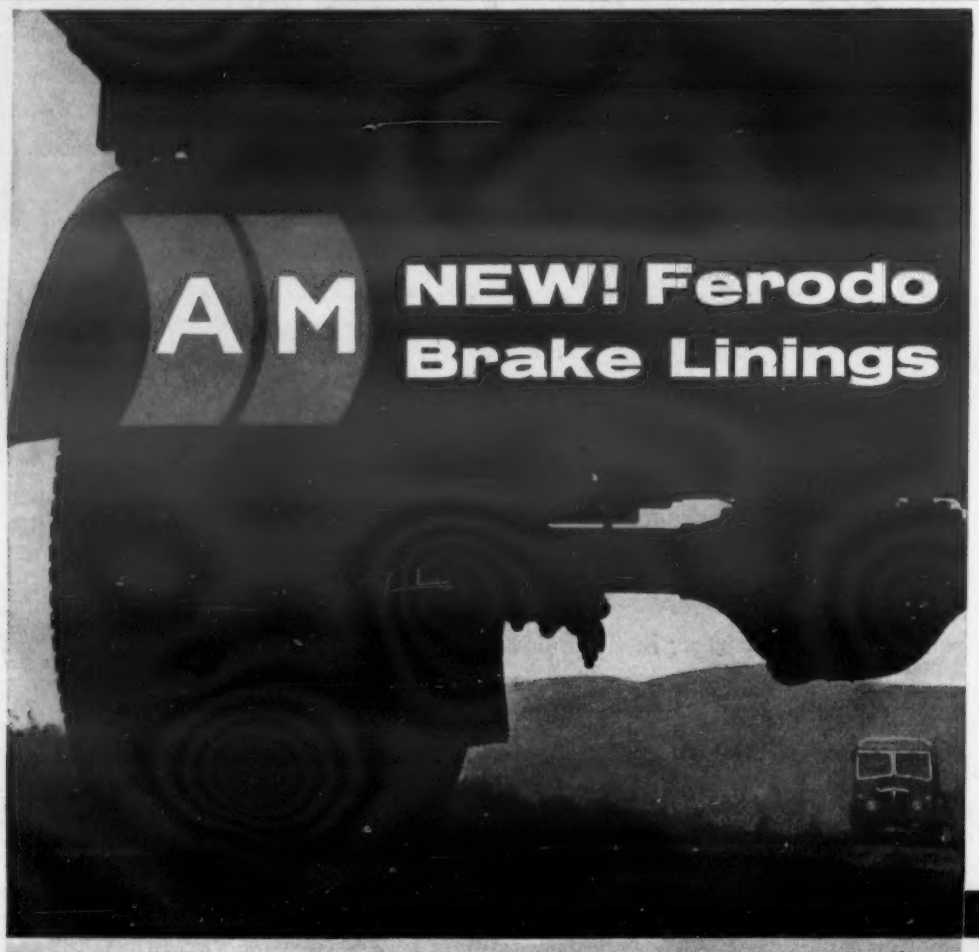
Several difficulties were encountered in the development of this technique and not the least of these was the finding of a suitable silicone adhesive to retain the wrapper in position on the conductors until the final taping had been carried out. Several adhesives were tried but either the adhesive qualities were unsatisfactory or difficulties were found in applying the adhesive to the wrapper by hand. Subsequently, a satisfactory material pre-coated with a silicone adhesive of the pressure-sensitive variety was produced by H. D. Symons and Co., Limited, and work is proceeding using this material.

The motor selected for tests with silicone insulating materials was the LT100 type designed in 1938 and fitted to the "1938" tube rolling stock. It is basically similar to the latest type of traction motor and was chosen because of the large number in service. The motor is a 168-h.p. (1-hr. rating) 600-volt four-pole machine. It has 31 armature slots, five conductors to each slot, and is wave round. The armature slot space factor is higher in this motor than in any other in service on London Transport's railways; this fact ensured that if silicone insulating materials were satisfactory on this type of motor, it would be possible to use them on others with a lower armature slot space factor.

Motors are now being placed in service insulated in this manner and a close watch will be kept on their performance to determine the additional life span to be expected. The wrapping machine was developed, and the tests with silicone insulating materials are being carried out, under the direction of Mr. A. W. Manser, chief mechanical engineer (railways), London Transport.



London Transport's machine with armature bar after completion of wrapping cycle; right, LT100 motor armature bars in various stages of insulation (from top to bottom) with evolute shoulders and conductors 2 and 4 insulated; with silicone wrapping in place; and after finishing overall with glass tape



Ferodo AM Brake Linings are good news for every medium and heavy vehicle operator! They are high friction moulded linings, specifically designed for just these vehicles. They have excellent anti-fade properties and freedom from squeal. And they cost considerably less!

How is this remarkable improvement possible?
Brilliant research work by the Ferodo team has evolved a material which lends itself to bulk production on new plant. By marketing the AM series in a deliberately limited range of commercial sizes Ferodo Limited passes on to the customer, in the form of substantially reduced prices, the benefits of standardisation and a new manufacturing technique. The new material therefore offers first-class braking at a lower cost.

Already many operators have proved how good Ferodo AM Brake Linings are. After exhaustive road tests they have proved for themselves that AM linings are as good as or better than standard Ferodo types, and now they're as enthusiastic as we are! As relinings become due they are adopting Ferodo AM Linings as standard equipment.

Lower initial cost—and full Ferodo performance! The new Ferodo AM Brake Linings are now in stock at Ferodo depots and available through your usual factor.

**ASK YOUR NEAREST FERODO DEPOT NOW
FOR A PRICE LIST OF THE NEW RANGE**

HIGH PERFORMANCE

LOWER COST

Fit FERODO

Brake Linings

AND SAVE—SAFELY!

FERODO LIMITED · CHAPEL-EN-LE-FRITH *A Member of the Turner & Newall Organisation*

8/53

RAILWAY BREAKDOWN PRACTICES

*Comparison of Equipment (Cont.)**

STAFF SELECTION AND WELFARE

THE Japanese National Railways is at present equipping all principal divisions with road motor vehicles for use at railway breakdowns. The Victorian Government Railways (Australia) has two road motor vans fitted out with equipment for breakdowns on the suburban electrified system, whilst a 5-ton motor truck is being used temporarily for other breakdowns; these vehicles are equipped with, inter alia, gas-cutting apparatus, timber packing, wire ropes and jacks.

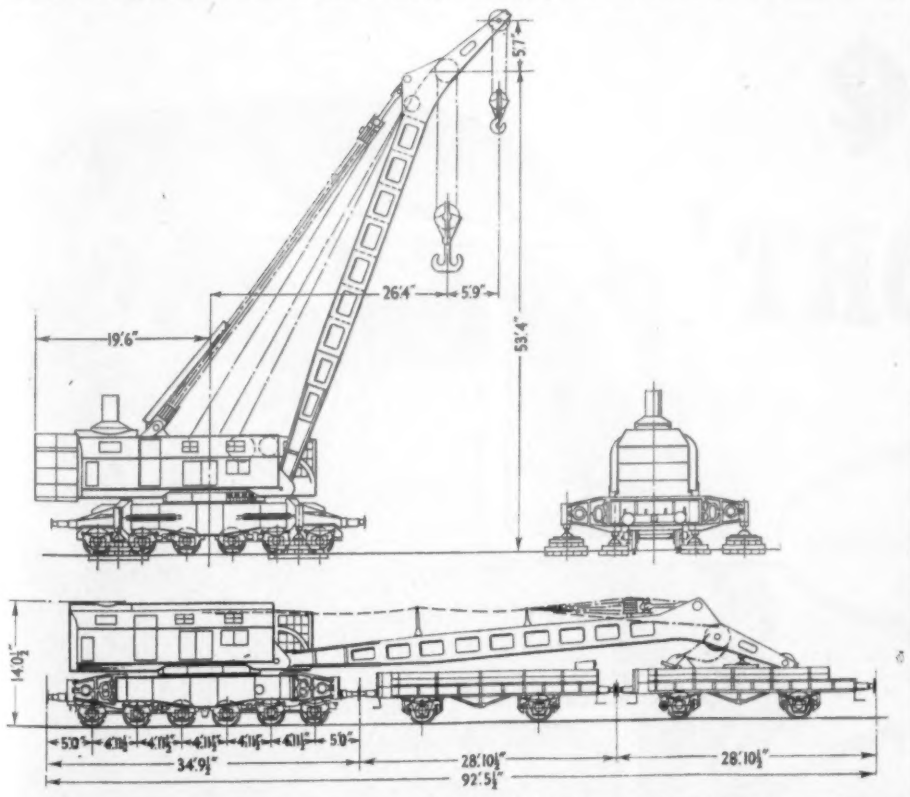
In certain countries, such as Germany and Norway, arrangements for road motor vehicles are left to the discretion of the local depots, but no such vehicles are used in Holland where the railway track is said to be too remote from the roads. Both

One of the latest Japanese National Railways Type SO-30 diesel cranes which can lift 65 tons

the Danish State Railways and the Swiss Federal Railways employ light breakdown motor vans which can run either on road or rail, and which carry a limited range of tools and equipment for overcoming minor breakdowns; a small trailer can be hauled if necessary. Road motor vehicles are used to a considerable degree for minor breakdowns in the United States, Canada and South Africa.

Selection of Staff

Reference was made earlier to the importance of selecting and training high-grade staff for breakdown work. British Railways have endeavoured to carry this policy into effect, but in practice it is difficult to rely entirely on picked men. Breakdown train crews in Britain generally consist of certain key men such as slingers and cranemen, a rota system being used to select the remainder of the gang from such staff as fitters' assistants. This work has come to be looked upon as lucrative—pay is at the normal rates for the hours on duty plus a special supplement—and some pressure is exerted to ensure that the work is shared. Crews



Steam-operated 90-ton crane of the West German Federal Railway ready for operation and in travelling condition

vary according to the nature of the accident, a typical gang being made up of a crane driver, a slinger, four labourers (or fitters' assistants), one fitter, one van attendant and one supervisor; the latter may be a leading fitter or foreman for minor incidents, or the shed master for more serious accidents, whilst district officers will probably be present when main lines are blocked.

It is difficult to generalise about train-manning practices in other countries. Normally crews tend to be a little larger than in Britain, the crews usually being called out by telephone or siren; motor cars and taxis are sometimes used to collect personnel. In Denmark, set crews are on call alternate weeks. The Danish State Railways and the Belgian National Railways make a special on-call allowance whilst French National Railways pays ordinary rates plus a bonus; in Holland, Germany and Norway, however, ordinary rates apply. Special rates are applicable in Australia, New Zealand, South Africa and Japan, but in North America pay is again at ordinary rates.

Welfare of Train Crews

The welfare of breakdown crews is of considerable importance if the best results are to be obtained. Most European railways—the British Railways are an exception in this respect—and virtually all railways in America, Australia, Asia and Africa normally fit bunks in the riding vans. A messroom with cooking equipment and seats, drying space for wet clothes and toilet facilities can be considered as standard equipment, and certain railways in North America, Australia and Africa also provide hot and cold showers. Owing to space limitation, these latter are not fitted by European railways.

The provision of comfortable upholstered seats is fraught with certain problems, since the wearing of dirty and greasy clothes makes it difficult to keep the seats clean. For this reason many railways, including those in Belgium, Holland, Italy, Sweden, Switzerland, India, and some of those in Australia, do not upholster the seats, whilst those who do usually use real or imitation leather. In North America, covers are sometimes made of waterproof canvas duck, Fabrikoid, and other plastic materials.

Protective Clothing

With the exception of certain railways in Asia, including particularly those in India, it is the general policy to provide a reserve of bad weather and protective clothing, comprising, inter alia, waterproof coats, hats, leggings and rubber boots. For normal working wear the breakdown train staff are mostly expected to wear the clothing issued generally to engineering and traffic staff, though some European railways make special overalls available. In addition, those railways in the more northerly latitudes issue special cold-weather clothing. In an endeavour to get away from the bulky nature of orthodox bad weather clothing experiments have been carried out, particularly in Britain and Japan, with lighter clothing made of nylon and other synthetic fibres.

Also of importance is the provision of adequate and nourishing food. In Britain hot drinks, tinned soups and tinned meats are provided regularly for the men at work. Most railways provide food at accident sites, particular attention being given to the availability of hot drinks.

It has not been the purpose of this article to provide detailed technical data on all the types of equipment available for dealing with accidents, or of their method of use. Comparison has been made between the policies adopted by a large number of railways, and attention has been drawn to outstanding developments. It will be seen that, whilst there is considerable variation in the application of technical equipment to suit local conditions, the underlying aims are basically the same, namely, to ensure that lines are cleared for traffic at the earliest possible moment.

Rerailing Equipment

Since this article was written, information from Germany shows that a lighter version of the Deutschland M.F.D.-type rerailing equipment is now being used by the German Federal Railway. This is constructed of lightweight non-corrosive metal, and it is claimed that the new appliances offer very considerable advantages in purchase price, weight and manoeuvrability. In particular, it should be noted that this equipment has been used for the righting of both road vehicles and diesel locomotives which have been turned on their sides in accidents.

United Dominions Trust, Limited, announces that two new overseas subsidiaries commenced business on June 1. They are United Dominions Corporation (East Africa), Limited, with offices in Nairobi, and United Dominions Corporation (Jamaica), Limited, with offices in Kingston. U.D.T. has also recently acquired the whole of the share capital of Traders Finance Corporation, Limited, of Auckland, New Zealand.

* Previous portions appeared January 31 and May 16.

NOW IN SERVICE AT NEWCASTLE

On April 12th British Railways (North Eastern Region) brought into service their latest modern

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O.C.S. ROUTE RELAY SIGNALLING INSTALLATION

Housed in a new air conditioned signal box, this installation takes over the work previously done by four signal boxes employing a total of 538 levers and 34 switches. The panel incorporates 641 route switches, controls 10 miles of track, and has provision for possible future extension.

There are 94 colour light signals, 61 route indicators, 131 sets of electro-pneumatically operated points, 200 track circuits and 2,850 relays of various types.

The signal equipment was supplied by, and the internal work—wiring, erecting relay racks, etc.—was carried out by

Westinghouse Brake and Signal Co. Ltd., 82 York Way, London, N.1

Saxby & Farmer (India) Private Ltd., Calcutta
Agents:—Bellamy & Lambie, Johannesburg
McKenzie & Holland (Australia) Pty., Ltd., Melbourne
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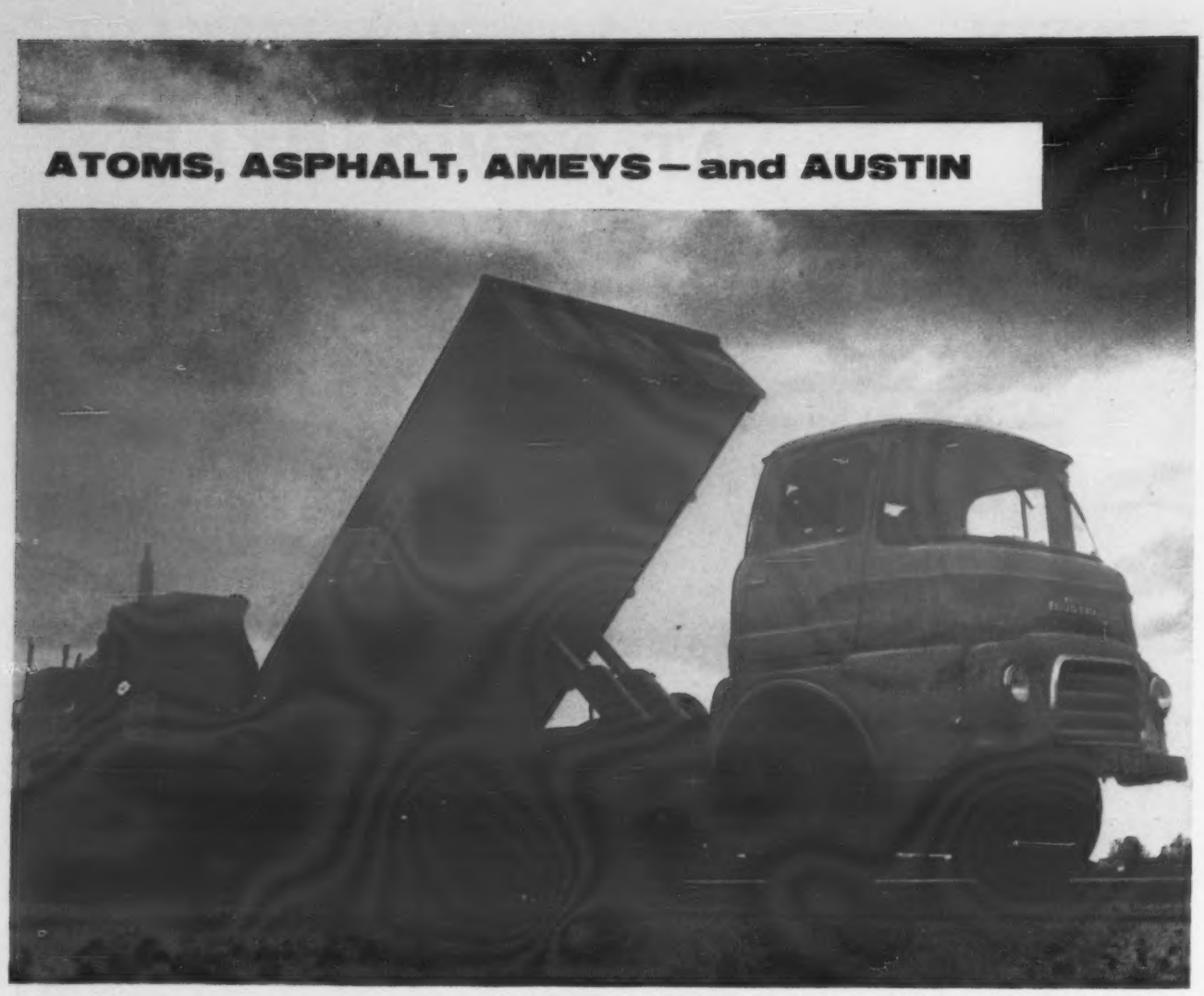
ATOMS, ASPHALT, AMEYS—and AUSTIN



Main runway at Bovingdon comes in for resurfacing. 7 ton of boiling bubbling bitumen is dropped from a mobile plant into the Austin tipper. Then the truck speeds over the airfield to the paver finisher. Slowly the bitumen is tipped out to form a new 2 inch deep layer.

YOU'LL SEE THEM working at atomic establishments, at aerodromes, on new motorways and by-passes. You'll find them tipping in quarries, carrying concrete mixers on construction sites, pulling specialised trailers on long distance haulage. What are they? Vehicles engaged on the many activities of the Amey Group of Companies. Austin vehicles.

From a horse and cart in the early 1920s the Amey fleet has grown to about 300 vehicles. 106 are Austins, ranging from ¼ ton vans to 7 ton tippers. Mr. R. W. Amey, Chairman, says, "In 1955 I was searching for a robust oil-engined vehicle, combining high quality and low price, to suit the needs of my 8 Companies. Austins fitted all our various requirements and I decided to standardise on them. I have never regretted that decision."

The all-purpose Austin commercial range includes vans and trucks from ¼-7 tons, plus tippers and prime movers for 15 ton train weights. All with 12 months' warranty and backing of B.M.C. Service.

At Woolworths, Oxford—Ameys storage and distribution service in action. From warehouses at Wootton and Frome goods are delivered within 24 hours through 8 counties. Austin 5 ton prime movers carry the goods. Unloading here is Driver Ted Feesey. His monthly mileage—3,000. His verdict on Austins—"Wonderful engines."

Hush-hush at Harwell. Every day this Austin is checked in and out the closely guarded gates of the Atomic Energy Research Establishment. Every day, on a 140-mile round trip, it brings 7 tons of cylinders from Wembley. Cylinders of hydrogen, oxygen, nitrogen and other gases needed for atomic research work at Harwell.

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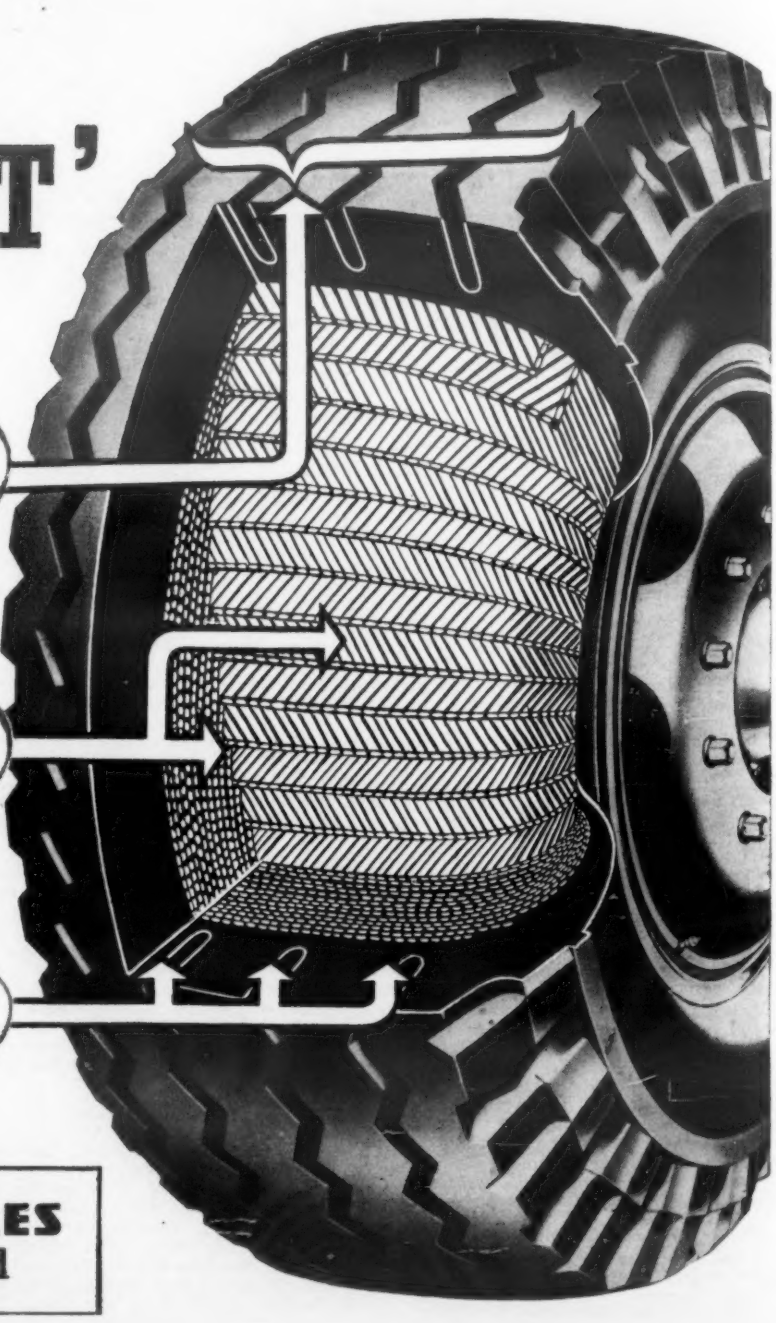

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ROAD VEHICLE INDUSTRY

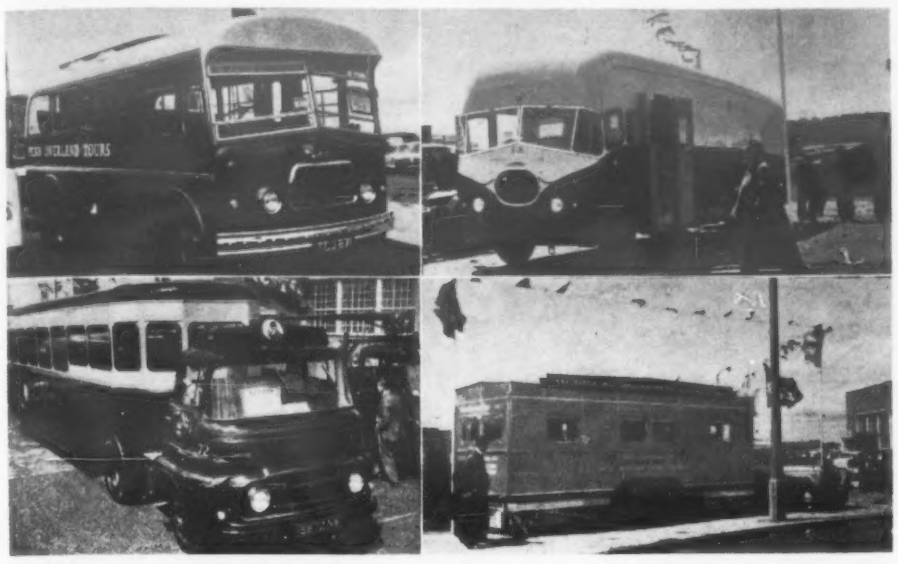
"Stretched" Bedford Light Van

UBIQUITOUS already, the Bedford light van is bound to attract new adherents now that a larger version of both the 10 to 12 and 15-cwt. vehicles is in production. A wheelbase of 102 in. is 12 in. longer and load space of 171 cu. ft. (including 9 cu. ft. beside the driver) 20 per cent greater than that of the current light van, which continues in production with a number of improvements. The length behind the driver in the new model is 95¼ in. Turning circle diameter at 37 ft. is 3 ft. larger. In other respects, specifications of two types are very similar. The extra length of the long van is achieved at the front of the body; the sliding doors are 12 in. wider than on the standard version, so that access to seats and load is even easier. Side windows are 12 in. wider and 3¼ in. deeper and the sliding part of the window is 6 in. wider. The sliding doors can be held securely in one of four positions—fully open, half open, three-quarters open or closed—by a spring-loaded catch controlled by the door handle. The side frame members are of heavier-gauge channel section than those of the standard van and the diameter of the propeller shaft is increased by 0.25 in. to 2.5 in. The rear axle is the same as on the standard model. Kerb weight (2,345 lb. for the 10-12 cwt. and 2,395 lb. for the 15 cwt.) and gross vehicle weight (3,800 lb. and 4,200 lb. respectively) are both 100 lb. more than for the corresponding standard models, but payload remains the same.

Several features of the longer van are now incorporated in the standard version. Narrower front door pillars, with a windscreen 1½ in. wider than the single piece screen previously used, give better visibility. New seats of tubular construction with spring-case cushions are now fitted and the passenger seat is hinged at the front for easier access to the load space. Transverse strengthening ribs are now built into the roof panel—seven on the long van, six on the standard one. The automatic holding stop on the sliding side doors is fitted also to the 90-in. wheelbase van, but there are only three positions in which the doors may be secured instead of four. The 15-cwt. models on each wheelbase are fitted with 6.00/6.40-15 six-ply tyres and heavy-duty springs. Prices of the long 10-12 cwt. vehicle are £360 for chassis and £470 for complete van in primer; prices of the 15-cwt. vehicle are £7 higher in each case. Prices of the short version are unchanged.

Kenex 14-Seat Bus

GOOD luggage accommodation, parcel rack on each side and attractive interior finish are features of a new 14-seat bus or coach just announced by Kenex, Limited, Dover. Complying with current p.s.v. regulations and named County P.S.V., the new vehicle is based on Austin or Morris-Commercial LD2 30-cwt. chassis, which can be powered by either B.M.C. petrol or diesel engines. Priced complete at £1,325 10s. (petrol) or £1,430 10s. (diesel), the County P.S.V. is claimed to be the cheapest vehicle of its kind available.



At the Austin Show at Longbridge: 30-seat Mulliner body on 3-ton chassis for use on a London—Ceylon—Cape Town service by Penn Overland Tours; large library body by Westgate Motors on 5-ton chassis for West Riding County Council; below, Austin f.c. tractor coupled to British Trailer Company semi-trailer and body shell for Joshua Tetley and Son, which company furnished the 34-seat body; and, right, Gipsy and trailer with Coventry Steel Caravans body used by Leslie Hartridge for diesel equipment demonstration and instructional unit

New I.H. Diesel Range

NEW direct-injection diesel engines, the most powerful ever built by International Harvester, are used to power two heavy-duty dump trucks recently announced by the company at its Chicago headquarters. The engines are conventional (by British standards) six-cylinder four-stroke units displacing 817 cu. in. with a compression ratio of 16 to 1. Two versions are offered: the DT817 turbocharged engine with a maximum rating of 375 b.h.p. at 2,100, which is used to power the Model 95 Payhauler of 18 cu. yd. (27 U.S. tons) struck capacity, and the D817 normally aspirated unit of 250 b.h.p. at 2,000 r.p.m. in the Model 65 Payhauler of 12½ cu. yd. (19 U.S. tons) capacity. Both bodies are of corrugated steel plate, the larger having exhaust-gas heated floor.

Thornycroft Oilfield Vehicle

(Continued from page 5)

3 m.p.h. in low first to 32 m.p.h. in high fourth. Using the very modest assumption of 70 per cent efficiency through low first gear, maximum gradient ability is 1 in 3.14 (32 per cent) at the gross solo weight of 21 tons (English) and 1 in 4.87 (20.5 per cent) at the gross combination weight of 32 tons.

Hands-England Body

The combination-type body produced by Hands-England Oilfield Equipment, Limited, Letchworth, provides a strong flat deck with tail roller for loading heavy pieces, a detachable fifth wheel coupling and, through the agency of a 60,000-lb. Woodfield Hoist winch, gin poles and yoke, a quickly erected mobile crane with a capacity of 10,000 lb. with gin poles at 60 deg. from the horizontal. The body is supported on 4 in. by 2 in. channel-section longitudinals and 6 in. by 3 in. channel-section cross-members. The floor is of 2-in. thick hardwood but about two-thirds of its area at the rear, where heavy loads would be carried over the bogie, is reinforced on the upper surface by an inset ¼-in. thick steel plate. Channels along each side of the body have their open ends upwards into which the 4½-in. dia. gin poles fold away when not in use and the various other crane fittings, such as the snatch-block link, snatch-block link support and cable-guide roller, have been designed to fold away into the floor so as to preserve an unimpeded deck, with the fifth wheel removed, for load carrying.

The full-width rolling tail pipe of ⅞-in. thick stainless steel is 8 in. in diameter; it runs on self-aligning roller bearings and is equipped with overload rollers to take very heavy winched loads. The 36-in. fifth wheel coupling is of the Hands-England gravity-cushioned type, in which the coupling is mounted to the chassis through a pendulum linkage, and is carried over the centre line of the bogie so that at maximum load the weight borne by the tractor is proportioned four-fifths over the bogie and one-fifth over the front axle. The winch and headrest are carried across the chassis immediately behind the cab and lockers are located under the body for stowage of the various loose items of equipment. The spare-wheel mounting is arranged at one end of the winch frame and the wheel can be raised or lowered quickly by a rope run over pulleys fitted on the headrest; if power assistance is required a turn of the rope can be taken about a capstan outrigged from the main winch drum, which can be run with the main winch declutched and can be used for various small winching jobs.

We were able recently to observe the operation and running of one of the completed vehicles and to drive it over the Army's rough track at Bagshot Heath. The tractor, complete with body, spare wheel and all gear ready for service, has a tare of about 11½ tons and for the purpose of our short trial it was given a test load to bring the running weight up to 19½ tons. This is rather less than the imposed load on the coupling of about 21 tons when a fully loaded semi-trailer is hauled, but the coupling is well aft and to have put the full permitted load forward of this point would have overloaded the front axle. Before loading, the ease and speed of rigging and dismantling the crane was demonstrated to us and a feature was that the whole operation could be carried out comfortably by two men.

Steel Cab

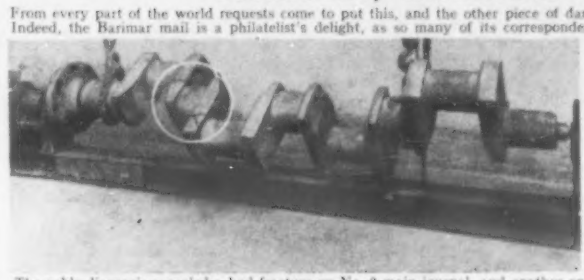
The tractor is equipped with the Thornycroft standard overseas steel cab for bonneted vehicles, which has interior plastics lining to the roof and down to waist level and is appointed in a manner to please the most fastidious of crews. Arranged for left-hand control, the driver's separate bucket seat has wide height and fore-and-aft adjustment which, in conjunction with a steering wheel adjustable for height, permits just the right driving position to be selected. Features include easy-to-read instruments, large scuttle ventilators, coat-hooks and interior sun visors with retaining chains.

As might be expected, with a bare two-thirds of the gross weight it is geared to haul, the Trusty had power in hand on the road and would go almost everywhere in high top gear. It proved very light to handle and, although designed as a rough-road rather than a cross-country vehicle, provided an exceptionally stable ride over the heavily pot-holed and rutted Bagshot Heath track. This despite the fact that the load centre of the test weights was a good deal higher than the normal coupling load would be. Here, too, the low-speed pulling power of the QR6 engine was evident and the majority of the course could be taken in top gear. On this type of stony and very rough surface a steady speed around 20 m.p.h. could be maintained with very small disturbance of the crew, auguring a good overall performance in service. The whole vehicle shows many evidences of thoughtful design and sound construction that should enhance the reputation of the British heavy-vehicle industry and help to increase its share in this lucrative and expanding market.

Here is an "S.O.S." from West Africa. It is for

"BARIMAR, ENGLAND"

From every part of the world requests come to put this, and the other piece of damaged machinery, to rights. Indeed, the Barimar mail is a philatelist's delight, as so many of its correspondents are in the world's most distant lands. In this instance news came from West Africa that the big 5-ton crankshaft of an oil engine, used in the gold mines, had developed two serious cracks.



Big crankshaft, cracked in two places, sent to Barimar all the way from a gold mine in West Africa.

The cable diagnosis revealed a bad fracture on No. 2 main journal, and another on the adjacent crankpin. The cracks were found to have spread to the crankshaft webs, penetrating deeply into the metal. Barimar cabled in reply that they would tackle the job. The crankshaft was shipped to England in an enormous packing case and within a few weeks arrived at the Barimar works in London.

The 5-ton crankshaft permanently repaired and straightened by Barimar under Money - Back Guarantee.

An outstanding "large-scale" welding achievement in every sense of the term. Barimar experts welded right to the bottom of the fractures, making sure that no latent weakness would be left in the shaft. It was found that as a result of the cracks, the shaft had sprung slightly out of alignment—a defect anticipated when the damage had been described—this was remedied by Barimar to the satisfaction of the owner's inspectors in this country. Within an astonishingly short time, the shaft was repacked in its original case and reshipped to West Africa. Accompanied by the Barimar Money-Back Guarantee—proof that the welding had been well and truly done, and that it would "stand up" to gruelling conditions, the damaged shaft had been reinvested with Strength and Durability. In brief, as in everything bearing the Barimar tag, "Welding *plus*!"

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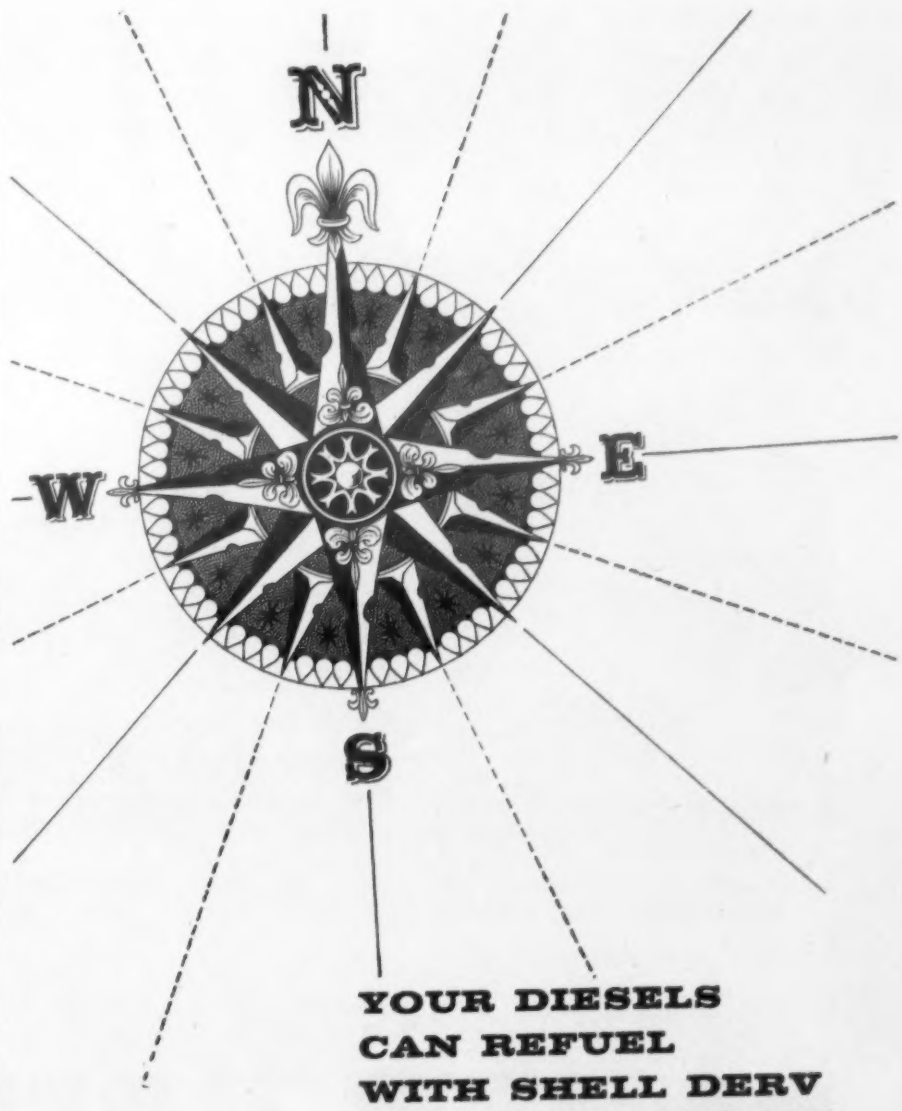
CRANKCASES: Fractures caused by broken connecting rods and run big ends, broken-off bearer arms, smashed sumps, cracked stud housings, broken bearing and flywheel housings, stripped drain-plug threads. IRON, ALUMINIUM OR ELEKTRON.
CRANKSHAFTS: Broken across web or journal, cracked, scored, threads stripped or tapers worn.
TRANSMISSION: Cracked or broken gearbox and axle casings, damaged gear teeth, worm splines and tapers, fractured shafts, cracked differential casings.

THE WORLD'S SCIENTIFIC WELDERS



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COMPANY MEETING

ODHAMS PRESS LIMITED

Sales Well Maintained

THE 39th Annual General Meeting of Odhams Press Limited was held on June 12 in London.

Mr. A. C. Duncan, F.C.A., Chairman, in the course of his speech said: Our gross revenue amounted to £36,231,795, an increase of £1,041,090. The net profit, subject to taxation, amounts to £1,995,521.

"The People" continues to show a steady rise in circulation, the current sale being in excess of 5,100,000 with a readership of 14,000,000. The "Sporting Life" continues to maintain its position as the recognised authority in its own sphere. The sales of the "Daily Herald" are in the region of 1,500,000 copies daily and the readership per issue exceeds 5,000,000. "Woman" maintains its premier position as a weekly periodical with the largest net sale in the world in its field. Our new publication, "Woman's Realm," which was successfully launched last year, is now the third largest colourgravure weekly for women, with a readership of nearly 4,000,000. "John Bull" is recognised as the outstanding magazine of its class, with a weekly sale in excess of 1,000,000 copies.

In February of this year we launched "Homemaker," a new monthly periodical printed in gravure, including pages in full colour. The title, which is, to a great extent, explanatory, appeals, of course in the main to the "Do It Yourself" public. I am pleased to say that this new venture of ours met with immediate and enthusiastic support from advertisers and we are gratified and encouraged by the public acceptance of the magazine.

The sales of our newspapers and periodica's are still well maintained at over 23 million copies a week. The circulations, in terms of readership, as the I.P.A. survey shows, are many times greater. The continued support of our advertisers is one of the best tributes to the value of this great coverage.

Since the date of the accounts under review, we have issued 628,572 ordinary share capital for the purpose of acquiring the business of the Hulton Press Limited, publishers of "Farmers Weekly," "Housewife," "Eagle" and kindred children's periodicals, as well as other properties, all of which should strengthen our organisation. More recently, we have made an offer for the ordinary share capital of George Newnes Limited, which has been recommended to their shareholders for acceptance by the Board of that long-established and prosperous publishing company.

If our offer is accepted by an adequate proportion of its shareholders, George Newnes Limited, since it is a business analogous to our own, can, we believe, be successfully and profitably combined with our own.

With regard to the current year, trading conditions have continued to be satisfactory, although competition continues to be increasingly keen, whilst so far no worthwhile reduction in prime costs has been obtainable.

We have always endeavoured to maintain, and, in fact, have enjoyed, happy relations with our works employees and it is our sincere and earnest hope that the printing dispute will be decided by arbitration.

The report and accounts were adopted and at a subsequent extraordinary general meeting the proposed increase of capital to £7,500,000, was approved.

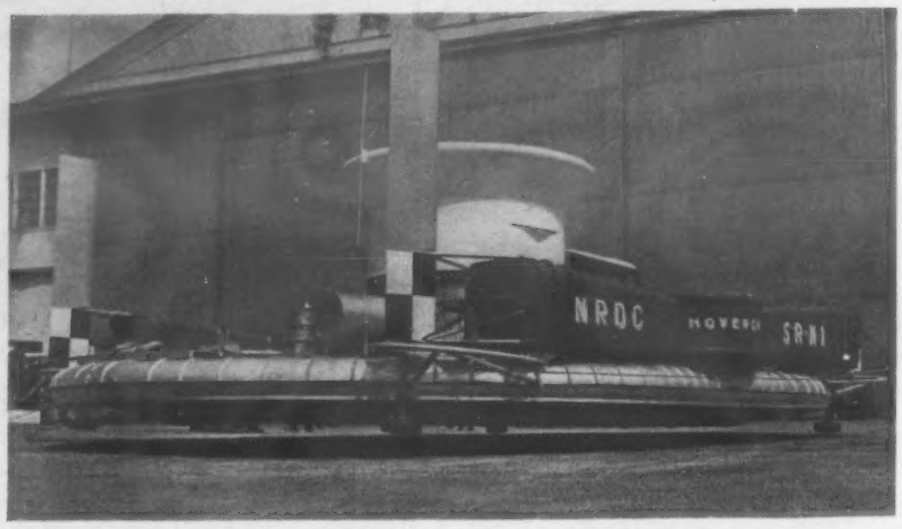
A NEW TRANSPORT VEHICLE?

The Promise of the Hovercraft

WIDESPREAD interest was aroused by the first public demonstration on June 11 of the SRN1, a hovercraft which has been developed by Saunders-Roe, Limited, to the requirements of the National Research Development Corporation on the basis of ideas put forward by Mr. C. S. Cockerell, who has remained closely associated with the project. The hovercraft employs a lift principle different from that of other craft. It is supported on a cushion of air and operates at heights just sufficient to clear waves and surface irregularities on land.

The lift principle is the generation of a cushion of air under the bottom surface of sufficient pressure to support the craft. The cushion is contained within a curtain of air that flows from the craft to the ground and it is the force required to bend the curtain outwards that dictates the magnitude of the cushion pressure that can be built up and sustained. For the curtain to have maximum curvature, which corresponds to maximum cushion pressure, the nozzles through which the air is ejected face towards the centre of the craft. The vertical component of the direct thrust forms a negligible part of the total lift and would be zero in the case of horizontal inward-facing nozzles. The cushion of air is carried along with the craft and any losses are replenished from the air curtain. Cushion pressure increases as the height of the craft drops and should the machine rise above its design height, it suffers a loss in lift so that the hovercraft has inherent stability.

The project was started as a private venture by Mr. Cockerell some six years ago and in 1956 was taken up by the Ministry of Supply as a classified project. Research work was entrusted to Saunders-Roe in the following year and the results of the assessment were promising but more in the commercial than the military field. In the fullness of time it was decided that the project should be released for such development and last September the N.R.D.C. was able to go ahead with the work, forming Hovercraft Development, Limited, to control the project. A further contract was given to Saunders-Roe for the design and manufacture of a manned development craft and it is this, completed two months ahead of schedule, which has been showing its possibilities since its first lift on June 7. It is much to the credit of Mr. Cockerell and of Mr. R. Stanton Jones, the Saro chief designer.



The SRN1 hovercraft during one of its earlier tests on the slipway at East Cowes is about 1 ft. off the ground

Performance of Prototype

With overall dimensions of 30 ft. long and 24 ft. wide, it is fitted with a 435-h.p. Alvis Leonides engine which drives a four-bladed axial fan which supplies the air for the curtains and the propulsive thrust. In its initial form the all-up weight is about 7,500 lb. The first curtain configuration to be tested comprises a "compartmentation" of the air curtain brought about by two curtains spaced 3 ft. apart. In this form the SRN1 is designed to operate at a height of about 15 in. and at speeds of the order of 25 knots. It carries a crew of two.

On the occasion of its first public demonstrations, the machine was first hovered about 1 ft. above the ground on the Saunders-Roe slipway at East Cowes and then, after being lowered into the water, was towed out into Cowes Roads where it underwent taxying and hovering trials with considerable success and despite the hampering effect of a retinue of pleasure vessels of varying shapes and sizes. Since then sea trials have continued satisfactorily and it becomes more and more apparent that the time is ripe for further development projects. It remains to be seen what form these will take and by whom they will be sponsored. The National Research Development Corporation has, by no means for the first time, played a praiseworthy part in bringing to fruition a worthwhile idea that might well have died for want of sufficient support and it is now well-placed to judge the best possibilities.

Horsepower Requirements

Unlike an aircraft, the hovercraft has no wings and it can maintain its height without forward speed. The power requirement for lift decreases with size, and at an intermediate size of about 400 tons, it would require only about a quarter of the engine horsepower per ton of an aircraft and could carry nearly twice the payload. Unlike a ship the machine operates clear of the water and its resistance to motion is very small. In consequence the craft can travel at speeds of from 70 to 120 knots with minimum disturbance of the water.

Among potential developments is one for a 100-ton passenger ferry suitable for cross-channel services. It would be about 130 ft. long and would cruise at 90 knots operating at a height of 1 to 4 ft. above the water. The payload would be equivalent to about 30 per cent of the laden weight and represent 300 passengers and baggage. Another potential design is for a 220-ft. long 400-ton craft designed to cruise at 100 knots operating at between 3 and 8 ft. above the surface over 300 nautical mile stage lengths. In this case the payload would be 160 tons, or 40 per cent of the laden weight. In general the power requirement of the hovercraft may be placed at somewhere about halfway between that of the road vehicle and that of the aircraft in relation to the weight per ton.

★

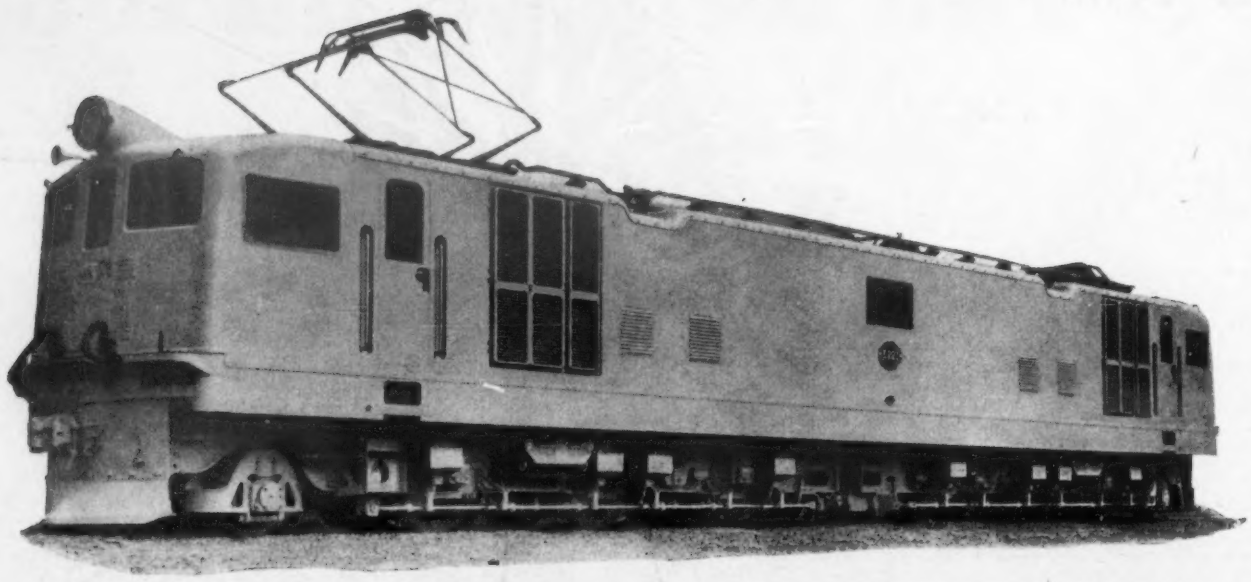
ELECTROLUMINESCENT LIGHTING

Some New Applications for Tin

ELECTROLUMINISCENT lighting is now being used in B.O.A.C. Comet aircraft for signs saying "Fasten belts," "No smoking" and so on. The signs are made from glass which has been made electrically conductive by suitable treatment with a tin compound, a new development described and illustrated in the current issue of *Tin and its Uses* (No. 46), which is available from Tin Research Institute, Fraser Road, Perivale, Middlesex.

Fungicides

Organotin compounds are finding increasing use as fungicides and an article describes tests carried out with wood blocks and with plywoods which were rendered immune to rotting by a single immersion in organotin solution. Practicable industrial methods of synthesising organotin compounds are described. A further article suggests a new soldering flux medium.



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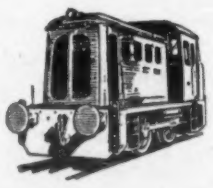


SOCIAL AND PERSONAL

M.P.T.A. Conference Programme

THE preliminary programme for the 1959 conference of the Municipal Passenger Transport Association, which will be held in Edinburgh on September 21-25, has now been announced. The conference will be opened in the Music Hall and Assembly Rooms, George Street, on Tuesday, September 22, with an official welcome from the Lord Provost of Edinburgh. The paper "A Review of the Pros and Cons of Bonus Incentive Schemes for Traffic Staffs," by Mr. R. Cox, general manager, Rochdale Corporation Transport Department, will be read that morning and the discussion on it will be resumed on Wednesday morning. On Wednesday afternoon a paper "The Future of Municipal Transport," by Councillor W. Alker, chairman, Bury Corporation Transport Committee, will be read, and the discussion will be resumed on Thursday morning. There will be visits to Walter Alexander and Co. (Coachbuilders), Limited, Falkirk, and to the B.P. ocean tanker terminal at Finnart, Loch Long.

* * *

Mr. G. A. Harris, has been appointed secretary of the Metropolitan and South Eastern Area of the Road Haulage Association. Miss D. Harrison has been appointed assistant area secretary.

* * *

The Southern Region Lecture and Debating Society announces that Messrs. F. P. B. Taylor, commercial officer of the Southern Region, G. A. Weeden, motive power officer, A. E. Hoare, mechanical engineering assistant, J. Parker, assistant civil engineer, and J. F. H. Tyler, signal engineer, have consented to become vice-presidents of the Society.

* * *

The board of directors of Guy Motors, Limited, announces the appointment of Mr. A. G. Jones, M.I.P.E., to the office of managing director of the company, as from July 1 next. Mr. Jones was

Mr. A. G. Jones

formerly director and general manager of Broom and Wade, Limited. He has previously been associated with several important engineering companies, and is a production engineer with many years of management experience. Other board appointments remain unchanged.

* * *

Mr. John Spencer Wills, chairman of the Birmingham and Midland Motor Omnibus Co., Limited, with members of the board of directors, recently visited the Midland "Red" undertaking. Several of the company's garages and other properties in different parts of the Midland "Red" area were inspected, including Spencer House, the coach terminal building in Birmingham, opened last summer, and the reconstructed omnibus station and garage at Stourbridge, now nearing completion.

* * *

At the sixteenth annual general meeting of the Society of Licensed Aircraft Engineers, the silver turnbuckle of the Society was presented to Air Commodore Sir Vernon Brown, C.B., O.B.E., M.A., F.R.Ae.S., Hon.M.S.I.A.E., R.A.F. (retd.). This award, which takes the form of a replica in silver of an early type Avro turnbuckle, was made to Sir Vernon Brown for outstanding services to aircraft engineering—not for any single aspect or achievement of his career, but for his overall services to aeronautical technology, to the profession represented by the membership of the S.I.A.E. and, above all, to safety in aviation.

* * *

Mr. A. T. Gandell, general manager of New Zealand Railways, and Mr. H. D. M. Jones, an officer of the New Zealand Marine Department, left earlier this month for a two-month visit overseas to confer with consultant firms of naval architects and shipyard authorities regarding the new road and rail ferry to be acquired for the Cook Strait service. They will study the design, operation, and administration of several modern ferries plying in open water and controlled by railway organisations at Vancouver, in Britain, and on the Continent. Mr. Gandell will also take the opportunity to discuss modern passenger and freight transport methods with senior executives of several railway systems.

* * *

In June, 1934, Vauxhall Motors, Limited, launched the Bedford Drivers' Club, which for 20 years was Britain's only club for commercial vehicle drivers. On June 12 six of the earliest-joining members, who have maintained their membership ever since the club began 25 years ago, travelled to Luton for the day as guests of the company. They toured the car and commercial vehicle factories. At a dinner that evening Mr. W. E. Horner, of Peterborough, the earliest-joining of all present-day members, was presented by C. E. Rust, assistant sales manager of Vauxhall Motors, Limited, with a gold watch. Engraved tankards were presented to five members who joined the B.D.C. in June, 1934, and there are many more with 25 years' continuous membership. The club was founded to promote good fellowship among all drivers, and to assist Bedford drivers particularly. There is no entry fee, and the driver is provided with a free life insurance of £150, plus £30 for each of his children. A bonus scheme, based on continuous membership, gives insurance cover to a top limit of £300. There are further benefits for disability, a preferential car insurance scheme, employment scheme, legal advice service, and a rest house scheme. District centres, sponsored by Bedford dealers, are operated in several parts of the country. Today, membership of the B.D.C. approaches the 72,000 mark.

Mr. K. D. Rhodes, B.Sc.(Eng.), A.M.Inst.C.E., has been appointed district engineer, Cardiff, Western Region, B.R.

* * *

Mr. D. L. G. Pamplin has been appointed staff assistant, shipping and Continental department, Victoria, Southern Region, B.R.

* * *

The Institution of Naval Architects is celebrating the centenary of its foundation in 1860 by special meetings to be held in London between May 16 and 20, 1960.

* * *

Mr. Arthur Richardson, who has been sales manager of the David Brown industrial gear divisions since 1953, has been appointed commercial manager of the company's automobile gear divisions.

* * *

Mr. K. R. Pelly has been elected chairman for the ensuing year of Lloyds Register of Shipping. Sir Guy Ropner is re-elected deputy chairman. Mr. J. E. Green was elected deputy chairman and treasurer vice Mr. W. L. A. Derby, who has resigned these offices.

* * *

The death has occurred of Mr. R. G. W. Coombes, who founded Bunty Motorways, Limited, Coventry. He was 62. After serving in the 1914-18 war (in which he was awarded the M.M. and the D.C.M.), Mr. Coombes went into the haulage business and later founded Bunty Coaches. He disposed of his interest in the firm in 1945 and emigrated to South Africa three years later.

* * *

The Engineering Institute of Canada at its 73rd annual meeting named Mr. N. R. Crump, president of the Canadian Pacific Railway as recipient of the Julian C. Smith Medal for this year. The medal was presented to Mr. Crump at a dinner in the Royal York Hotel, Toronto, by Dr. K. F. Tupper, retiring president of the association. The award is made by the Institute for "achievement in the development of Canada." It was awarded first in 1939 to perpetuate the name of a late president of the E.I.C. Mr. Crump has been a member of the engineering body since 1928.

* * *

Mr. F. D. Rose has been appointed public relations officer of London Transport in succession to the late Mr. W. R. Robertson. He joined the London General Omnibus Company in 1921 and until 1933 was employed in the department of the operating manager, L.G.O.C. On the formation of the London Passenger Transport Board in 1933 he was transferred to the Parliamentary office and became responsible for all matters in connection with the licensing of road services within the London Transport area. In 1948 he became senior assistant to Mr. W. R. Robertson, the public relations officer.

* * *

H.M. the Queen has been graciously pleased to send to the president of the Railway Convalescent Homes, Mr. K. W. C. Grand, the following message:—

> "Please convey to the board of the Railway Convalescent Homes my sincere thanks for their loyal assurances. As Grand Patron of the Homes, I send my best wishes to all engaged in the management of them."

The board of the Railway Convalescent Homes recently passed a resolution:

> "Resolved that a Loyal Message should be sent to Her Majesty the Queen, as Patron in Chief, in commemoration of 50 years of Royal Patronage."

which was laid before Her Majesty.

* * *

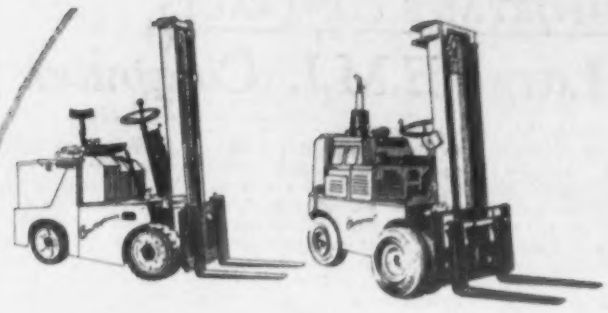
The Minister of Transport has appointed Councillor H. Solomons and County Alderman Mrs. Bolton to be members of the Transport Users' Consultative Committee for the London Area to represent labour and local authorities respectively. Councillor H. Solomons is a member of the Shop, Distributive and Allied Workers' Union. He also served as a member of the committee for the staggering of working hours in Central London. Alderman Mrs. Douglas Bolton has been a member of the London County Council since 1934 and was chairman of the Council during 1953-54 and of the Town Planning Committee of the Council from 1945 to 1949. Mrs. Bolton is a member of Crawley New Town Corporation.

* * *

H.E. Sharif-Emami, Persian Minister of Industries and Mines, recently visited the factories of A.E.C., Limited, and Park Royal Vehicles, Limited, accompanied by Mr. K. E. Mackenzie, of the Board of Trade. He was received by Sir William Black, chairman of A.E.C., at the Southall works, which have just finished producing the last of 250 A.E.C.-Park Royal double-deck buses now operating in Teheran. This order, amounting to £2¼ million, was achieved in the face of fierce overseas competition and a condition of sale was that the vehicles were to be delivered on time. Sir William was able to tell His Excellency Sharif-Emami that the last bus was recently delivered and that all were delivered on the original schedule. After lunch, the Minister travelled to Park Royal, where he was received by Sir Wavell Wakefield, M.A., M.P., chairman of Park Royal Vehicles, Limited, and shown the shops where coach and bus bodies are produced for countries all over the world.

* * *

Mr. B. Seymour, B.Com., M.Inst.T., has been appointed goods commercial officer in the divisional traffic manager's office, London, in connection with the Western Region traffic reorganisation scheme. Mr. R. J. Hill becomes passenger commercial officer. Mr. Seymour started his railway career with the Great Western Railway at Cardiff in 1921. In 1949 he was appointed assistant district goods manager at Birmingham and, in December of that same year, moved to Paddington as head of the goods development section, commercial superintendent's office. Two years later Mr. Seymour was appointed assistant district goods superintendent, Paddington, and in 1953 became district goods manager, Reading. In October, 1956, he transferred to the Eastern Region (London Tilbury and Southend Line) as commercial superintendent, which post he relinquishes upon taking up his new appointment. Mr. Hill joined the Great Western Railway in the Chester division in 1917. He represented the operating department on the chief commercial manager's post 1939-45 war planning committee and was also chairman of several committees of operating and motive power department representatives. In 1950 he was appointed head of the timetable and special traffic and engine diagramming section in the office of the superintendent of the line. In 1955 Mr. Hill was transferred to the commercial department as assistant (passenger and parcels) to the commercial officer at Paddington, which post he now vacates upon his new appointment.



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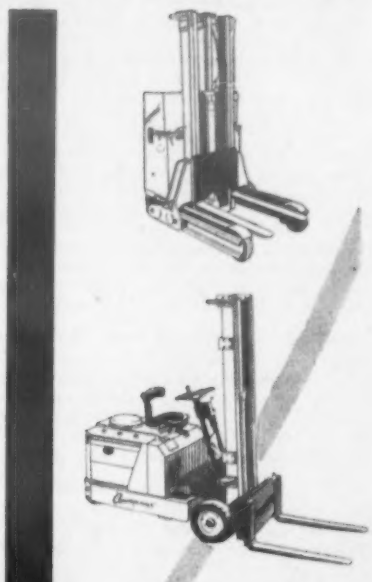

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IMPORTANT CONTRACTS

Large E.M.I. Computer for B.E.A.

AN order has been placed by British European Airways for an electronic computer costing over £250,000 to aid efficiency and meet growing demands on its ground organisation. B.E.A. thus becomes one of the first European air lines to recognise that the ever-growing volume of air traffic and speed of operation of modern aircraft call for much faster clerical handling procedures than is possible with conventional methods. The computer, an EMIDEC 1100, is being manufactured by E.M.I. Electronics, Limited, at Hayes, Middlesex, and will be one of the largest electronic data processing systems in the country. Capable of carrying out tens of thousands of arithmetic calculations a second, the EMIDEC computer will provide information of passenger and freight movements far quicker than has ever before been possible, enabling flight schedules to be planned for the greatest convenience of the public and highest operational efficiency. Up to now, B.E.A. has been able to get this sort of information from conventional office systems but business is increasing at such a rate that within a year or two more advanced data processing methods will be essential. In addition to handling a large proportion of B.E.A.'s revenue accounting and the complex clerical work required to deal with the large volume of inter-airline ticket transfer facilities, the computer will be able to undertake a great deal of other operations such as costing and budgetary control, purchases accounting and payroll preparation. The EMIDEC 1100 is an all-transistor machine employing the most advanced techniques. It was chosen as the most suitable to meet B.E.A.'s needs after careful evaluation of both British and American systems.

Bradford Buys Second-hand Trolleybuses

Subject to the condition of the vehicles being satisfactory, the Bradford Finance Estimates Sub-committee has approved a recommendation of the transport committee that 12 second-hand trolleybuses be purchased from Maidstone and District Motor Services, Limited, for £3,000.

More Atlanteans Ordered

Two more transport undertakings have placed orders for the rear-engined Leyland Atlantean double-deck bus. Chesterfield Corporation has ordered four Atlanteans, as well as 10 PD2.30 Titan double-deckers, and Western Welsh Omnibus Co., Limited, has placed an order for 12 Atlanteans. So far, total orders from British companies and municipalities for this type of bus now amount to a value well over £1¾ million.

North Western and Walsall Order Loline

Orders have been placed by the North Western Road Car Co., Limited, for 15 double-deck Dennis Loline chassis fitted with 71-seat low-height front-entrance bodies supplied by East Lancashire Coach Builders, Limited. The vehicles will be delivered ready for service by April 1, 1960. Walsall Corporation has also ordered 15 Loline buses with Willowbrook front-entrance bodies, similar to the prototype now in service that was exhibited at the last Commercial Motor Show. North Western's vehicles will have Leyland engines while those for Walsall will be Gardner powered.

Eastern Region Contracts

The Eastern Region of British Railways announces the following contracts:

Metropolitan-Vickers-GRS., Limited, London, W.C.2, for supply and installation of signalling in connection with hump cabin and control tower at Ripple Lane marshalling yard.

Stothert and Pitt, Limited, Bath, for supply and erection of four 6-ton electrically operated rail travelling level-luffing jib cranes and associated equipment at Canning Town and Blackwall.

Dorman Long (Bridge Engineering), Limited, Middlesbrough, for reconstruction of superstructure of bridge between Clapton and St. James's Street.

Saville (Tractors), Limited, Feltham, for one International BTD-20 crawler tractor and bullgrader.

The Brightside Heating and Engineering Co., Limited, Sheffield, 9, for supply and installation of boiler plant, heating system, oil storage equipment and all piping for diesel maintenance depot, Stratford.

C.N.R. Heated Van Fleet Increased

The Canadian National Railways has placed an order for 200 50-ton heated box cars with Eastern Car Division of Dominion Steel and Coal Corporation, Limited, to supplement the company's fleet of heated refrigerator cars in the movement of perishables and other goods which must be kept from freezing. The new cars will have a capacity nearly double that of standard refrigerator cars.

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TENDERS INVITED

THE following items are extracted from the Board of Trade Special Register Service of Information. Inquiries should be addressed, quoting reference number where given, to the Export Services Branch, Board of Trade, Lacon House, Theobalds Road, London, W.C.1.

June 30—Ceylon.—Irrigation Department for two 10-ton capacity MOBILE CRANES. Tenders to the Chairman, Tender Board, Ministry of Lands and Land Development, P.O. Box 500, Colombo. (ESB/14599/59.)

July 1—Ceylon.—Ministry of Transport and Works for two 150-h.p. diesel-engined low-bed ARTICULATED LORRIES. Tender documents from the office of the High Commissioner for Ceylon, 13 Hyde Park Gardens, London, W.2, quoting Tender No. DLF20.

July 3—Ceylon.—International Co-operation Administration for four petrol-engined DUAL-PURPOSE (STATION WAGON) VEHICLES. Tenders to the Chairman, Tender Board, Ministry of Education, Colombo, 2. (ESB/12033/59/ICA.)

July 1—India.—Neyveli Lignite Corp. (P), Limited, for one ARTICULATED LOW-BED LORRY of 120-metric ton capacity. Tender documents, price Rs.10.20, from the Deputy General Manager (Tech.), Neyveli Lignite Corp. (P.), Limited, Neyveli, South Arcot District.

July 7—Australia.—Commonwealth Railways for six steel second-class passenger SLEEPING-CARS for standard gauge. Tenders to the Secretary, Commonwealth Railways, 623 Collins Street, Melbourne. (ESB/11806/59.)

July 9—India.—Madras Port Trust for two TRACTORS with ATTACHMENTS for handling iron ore. Tenders to the Chief Engineer, Madras Port Trust, Madras. (ESB/12812/59.)

July 13—Portuguese East Africa.—Ports, Railways and Transport Department for 48 items of SPARES for LOCOMOTIVES. Photo-copies of tender documents from Export Services Branch, B.o.T., price 8s. (ESB/13472/59.)

July 15—Ceylon.—Ministry of Transport and Works for 10 STAKE-SIDED PLATFORM LORRIES for 16,000 lb. g.v.w. Tenders to the Chairman, Tender Board, Ministry of Transport and Works, P.O. Box No. 547, Colombo 1. (ESB/12777/59.)

Export Opportunity—Bahamas.—Central Garage, Limited, P.O. Box 1525, Nassau, is interested in representing a United Kingdom manufacturer of BATTERIES of guaranteed life. (ESB/12671/59.)

SHIPPING AND SHIPBUILDING

Report on Irish Services

COLLECTIVE arrangements made between shipping companies operating across the Irish Sea to fix through rates are not contrary to the public interest. This is conceded by the Irish tribunal of inquiry which has just reported on Irish Sea freight services. The tribunal considers, however, that the Irish—British traffic conference might tend to discourage or delay innovations, such as the introduction of containers, and to deny the benefits of improved efficiency. The tribunal was set up after protests had been made by livestock traders and other organisations and proposals had been made that Irish Shipping, Limited, should participate in cross-channel shipping services.

The report makes no firm recommendations but in its suggestions and observations it urges greater Irish participation in cross-channel shipping trade, particularly in the provision of ferry services, where compromises on rates are most likely. The emergence of a road-sea ferry service between Dublin and Preston is considered to be likely to have a profound effect on charges.

Referring to competition, or absence of it, on the Irish services, the report says that from 1932 the British Transport Commission had been pressing the conference to agree to the fullest possible use of containers in the cross-channel trade but the conference granted only the use of small open containers for the rougher types of traffic. The general use of containers was finally accepted in August, 1948, but only as a means of combating the competition from the new Preston—Larne ferry service. The report suggests, as a counter-balance to collective arrangements, the setting up of a voluntary body representative of shippers throughout the country to consider the problems of cross-channel transport related to freight rates, to co-ordinate information, and to discuss them with the Irish—British traffic conference or with individual undertakings.

It is shown that terminal costs, including loading and discharging, form a high proportion of total costs in cross-channel trade and range from 42 per cent to 74 per cent of the total costs of some shipping companies in 1956. These figures do not include vessels' expenses in port and do not therefore reflect any additional costs due to slow turn-round of vessels. Loading and discharging costs, consisting very largely of labour costs, are by far the largest single constituent in cross-channel freight costs.

Irish Car-Ferry Service

TWO British Railways ships, the *Cambria* and *Hibernia*, are to operate an experimental car-ferry service between Dun Laoghaire and Holyhead from the beginning of July.

Coach and Steamer Trips

SHIPOWNER P. and A. Campbell, Limited, of Cardiff and Bristol, now uses coaches to provide tours by steamer and coach. There are tours by steamer alone from Bristol, Weston-super-Mare, Cardiff, etc.; coaches are being used to enable trips to be made when there is no water at Bristol. These coaches depart from Bristol 90 min. before the steamer departure from Weston and are back in 95 min. after the steamer has put in at Weston. Campbells also run a number of coach tours to Minehead and then by coach for a tour of Exmoor and via Weston to Cardiff and then by coach to the Welsh mountains.

Atomic Ship Precautions in Port

NO port need be concerned about contamination from the new United States atomic-powered cargo vessel *Savannah*, because adequate precautions had been taken should she be involved in a collision or sink, said Mr. J. Allen, U.S. Under-Secretary of Commerce, recently. "All radiological safety measures necessary are being taken. A cylindrical steel vessel provides for protection against an instantaneous rupture of the reactor. The containment vessel will prevent radioactive matter from the worst conceivable internal accident from reaching other parts of the ship. With regard to disposal of radioactive waste, the method to be used initially in the *Savannah* provides for the complete retention of all liquid and solid wastes until the ship returns to a port equipped with special facilities for safe removal and shipment to a waste disposal area," he said. The *Savannah* is due to be launched by Mrs. Eisenhower at Camden, New Jersey, on July 21.

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FINANCIAL RESULTS

NOTES on the trading results, dividends and financial provisions of companies associated with the transport industry are contained in this feature, together with details of share issues, acquisitions and company formations or reorganisations.

Cranes (Dereham)

Net profit of Cranes (Dereham), Limited, for the year ended March 31 was £48,368 (£60,357) after tax and final dividend is 20 per cent (22½ per cent).

Southdown Motor Services

In the year ended March 31, the traffic receipts of Southdown Motor Services, Limited, were £3,723,668 (£3,501,368) and net profit came out at £214,458 (£149,523), after tax and depreciation. Dividend is 10 per cent (same).

J. and E. Hall—Thermotank Merger

Subject to the approval of stockholders, there is to be a merger between J. and E. Hall, Limited, which is engaged principally in the manufacture of refrigerating machinery, and Thermotank, Limited, designer and manufacturer of all types of air-conditioning equipment. The new company, which would be known as Hall-Thermotank, Limited, would combine the design knowledge and the technical and manufacturing resources of both organisations. The new company would offer to acquire the whole of the ordinary stock of Vent-Axia, Limited, whose board recommends acceptance.

British Electric Traction

The British Electric Traction Co., Limited, is paying a total dividend on the deferred ordinary shares of 35 per cent, with a final payment of 25 per cent, against 17½ per cent (total 25 per cent). Group profit in the year ended March 31 rose to £4,615,780 (£3,687,219). Group net profits at £2,658,337 (£1,883,598) after tax of £1,957,443 (£1,803,621). Profits attributable to parent were £2,286,420 (£1,619,878). Subsidiaries retained £467,865 (£187,105). B.E.T. is the largest single holder in Associated-Rediffusion, Limited, the television programme contractor.

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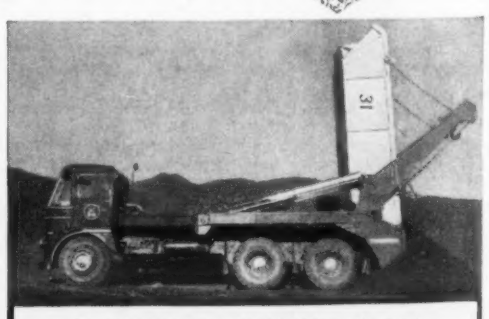
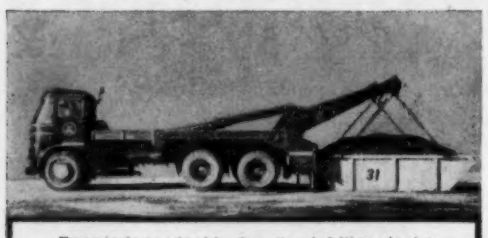
Using the Bennes-Marrel Multi-bucket System, The Steel Company of Wales Limited are convinced that a considerable saving in the handling of a wide variety of materials can be achieved. As a result, they have ordered **six complete units** on Foden FG.6/20 Chassis for on-site operation.

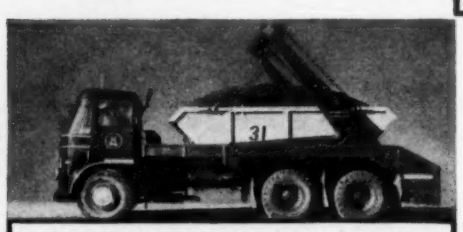
Consider your own handling problems in the light of this important development.



Positive action hydraulically controlled rams provide easy dumping.



Rear independent hydraulic stabilizer jacks down. Load to be raised to Unit Deck.



Hydraulically operated rams fully retracted. Load located on Unit Deck. Jacks retracted.

One-man operated . . . an astonishing time and labour saver . . . the Bennes-Marrel Mobile Multi-bucket System brings to the field of bulk materials handling a new standard of efficiency.

Hydraulically controlled solely by the driver from his cab the unit loads and unloads itself with detachable containers, one of which is transported whilst the other is being loaded. This, of course, effects astonishing savings in waiting time and labour costs.

Showing load being raised by retraction of hydraulically operated lifting arm rams.

We shall be happy to send you our fully descriptive brochure, or to examine your handling problems and make our recommendations.

AERO MAINTENANCE EQUIPMENT LIMITED

47 Victoria St., London, S.W.1. Abbey 6238. Cables: 'Ambie London'

A MEMBER OF THE ARUSHA GROUP OF COMPANIES

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